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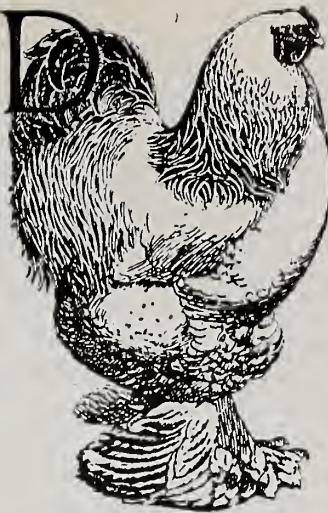
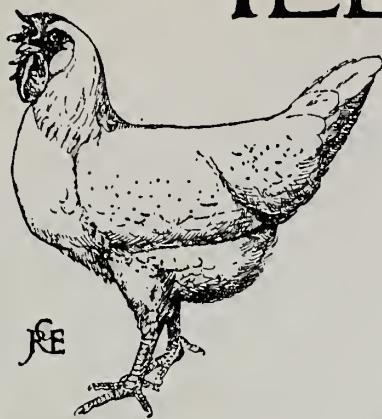
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Their Excellencies the Earl and Countess of Aberdeen.

[SEE PAGE 347.]

THE ILLUSTRATED POULTRY RECORD



VOL. III.—No. 8.

May 1, 1911.

Monthly Sixpence Net.

DIARY OF THE MONTH.

EDITORIAL NOTICES.

Telegrams: "VIVACIDAD." Telephone: CITY, 2083.
ENTERED AT STATIONERS' HALL.

The Editor will be glad to consider any MSS., photographs, or sketches submitted to him, but they should be accompanied by stamped addressed envelopes for return if unsuitable. In case of loss or injury he cannot hold himself responsible for MSS., photographs, or sketches, and publication in the ILLUSTRATED POULTRY RECORD can alone be taken as evidence of acceptance. The name and address of the owner should be placed on the back of all pictures and MSS. All rights of reproduction and translation are reserved.

The Editor will be glad to hear from readers on any Poultry Topics, and all Queries addressed to the paper will be answered by experts in the several departments. The desire is to help those who are in difficulty regarding the management of their poultry, and accordingly no charge for answering such queries is made.

The Annual Subscription to the ILLUSTRATED POULTRY RECORD at home and abroad is 8s., including postage, except to Canada, in which case it is 7s. Cheques and P.O.O.'s should be made payable to the ILLUSTRATED POULTRY RECORD.

The ILLUSTRATED POULTRY RECORD is published on the first of every month. Should readers experience any difficulty in securing their copies promptly they are requested to communicate immediately with the Editor. The latest date for receiving advertisements is the 20th of the month preceding date of issue.

The utmost care is exercised to exclude all advertisements of a doubtful character. If any reader has substantial grounds for complaint against an advertiser he is requested to communicate at once with the Editor.

The Dublin Conference.

As announced in the previous issue, the Department of Agriculture and Technical Instruction for Ireland has, in conjunction with the British Board of Agriculture, summoned a conference to consider the present position of the poultry industry, and what steps are desirable for its extension. We give on other pages the programme of what promises to be an important gathering, and various articles dealing specially with Ireland. The facts given by "Statistician" are indeed remarkable, affording abundant encouragement to further efforts for the development of what has become one of the most important of Irish rural industries. It must not, however, be forgotten that the entire kingdom is to be brought into the discussions, and that it is necessary for equal attention on the part of central and local authorities, as of individual producers in England, Scotland, and Wales. Opportunities of extension in these are as great as, if not greater than, across the Irish Sea, not alone because there is a teeming population to be fed, but that as Ireland is much more advanced in average production than is Great Britain, the leeway is greater. It is impossible, however, to make comparisons that are at all reliable until the poultry census taken in 1908 and the production statistics are available. When these are issued we shall be in a much better position to estimate the actual value of the poultry industry throughout the entire kingdom. It is a sign of the times that this conference should be summoned by a Government Department, one which marks a vast advance in public opinion and a realisation of the important place occupied by eggs and poultry in the national bill of fare. Poultrymen everywhere will await with eager anticipa-

tion records of the proceedings at Dublin, and wish for it a complete success.

What Public Authorities Can Do.

One of the results which may reasonably be expected from this conference is an enhanced attention on the part of public and local authorities to the wider aspects and requirements of the poultry industry. To a considerable extent farmers and others have passed from the stage of indifference or of antagonism to poultry. They have proved in thousands of instances that when regarded as a part of their live stock, fowls will yield profits as large as, if not larger than, any other branch of their operations. As individuals, however, except where there is a large local demand, they cannot hope to obtain adequate returns. That part of the business needs to be organised, especially in the case of smaller producers. Here leading is essential, and such work is costly. To attain the best results, education is essential, direct or indirect. The term used means training the mind to assimilate new ideas and dissemination of information. In other branches education is a public charge, and what we must constantly urge is that those who desire to obtain instruction shall be able to secure it in a manner and at a time when of most service to them.

The Need of Larger Ideas.

In none of the various parts of the kingdom, but perhaps more in Ireland than elsewhere, has anything like a serious attempt been yet made to provide education in poultry-keeping on adequate lines. It is entirely a question of money, which is lavished on subjects of less importance to the national welfare, but doled out grudgingly and sparsely for this subject. The time has come when a change must be imperatively demanded. Whilst thus much is done for the smaller occupiers, we have to face developments on a larger scale, conducted by those who can, if they wish, afford to pay for instruction and experience. For these it is necessary that opportunities shall be available. To such, one of the most important helps that can be given is in the direction of experimental and research work, dealing with problems and difficulties that few individuals have either the time or the means to study exhaustively. We know what vast results have accrued from experiments in other branches, and, practically speaking, poultry questions have scarcely been touched. The soil is virgin. Nothing is of greater importance than the institution of experimental and research work on larger lines. But the provision must be liberal and adequate. If for every £100 expended on eggs and poultry annually in the kingdom

one shilling were applied in this manner—that is, less than half a farthing in the pound—a vast amount of valuable work could be accomplished.

Legal Anomalies.

Up to 1906 every dog was allowed a first bite, but in the year named an Act was passed in respect to cattle—by which term was specifically included mules, asses, sheep, goats, and swine—depriving dogs of that privilege. Now when they “go for” any of these animals the owner of the dogs must pay for the damage done. That is as it should be. There is no reason we can see why the dog should be permitted to damage anyone’s property, to say nothing as to the needless pain inflicted on the innocent victims. Two cases tried recently in Yorkshire County Courts have shown that hens are not included, and the dog may have one taste of chicken without his master paying for it. One of these cases was especially hard. Finding a dog worrying his fowls, a poultry-keeper shot it. He has had to pay for the dog, and failed to recover the value of his birds, which is manifestly unfair. We should have been more content if the dog’s owner had failed also in his claim. The fact is poultrymen are not half awake. When the 1906 Act was under consideration they should have agitated for hens, which are of more value to the country than asses and mules, to be enumerated. The opportunity, however, was allowed to go by. What now ought to be done is for all concerned to bring pressure to bear upon the Legislature to pass an Amending Act to remedy what is an unfair and intolerable state of things. Probably the better way would be to endeavour to secure the abrogation of the first bite, whether the victim be human being or hen, cat, or cattle. It is an anomaly that ought to be purged from our civil law.

Sale of Young Turkey Chicks.

The great growth in the sale of what are called “day-old chicks” is one of the most remarkable developments of the poultry industry during recent years. Hundreds of thousands of these birds are now annually hatched at central establishments and dispatched when twenty-four hours old, travelling safely for hundreds of miles. The advantages to the purchasers are very great, as they obtain chicks instead of the mere possibility, as when eggs are bought, and the birds appear to be less affected by the journey than are the eggs. Fresh stock can thus be obtained, and the youngsters reared amid conditions which will be theirs for life. It has now been proved that the same system can be carried out with turkey chicks. This opens a wide field for extension, and may lead to important develop-



BUFF ORPINGTONS.

PULLET ON LEFT.

1st and Club Special, Sussex County.
2nd, Bolton.
2nd, Birkenhead.

COCKEREL.

1st, Royal.

*All Bred and Rared
On the Farm.*

PULLET ON RIGHT.

1st, Royal Counties,
P.C. Medal, Best Pullet in Show,
Special, Best Chicken Hatched 1910.
1st and Club Special, Bolton.
1st and Club Special, Birkenhead.

Bolton Model Poultry Farm, WESTHOUGHTON, LANCASHIRE.

(Principals, G. M. & W. W. DOBSON).

Manager, WM. BIBBY.

Telegrams: "FOODS, WESTHOUGHTON."

Telephone: 30 WESTHOUGHTON.

BREEDERS, EXHIBITORS, AND EXPORTERS OF
BUFF, BLACK, AND WHITE ORPINGTONS.

Winners in 1910 of 2 Challenge Cups, 3 Club Specials, 15 Firsts,
11 Seconds, 7 Thirds, all with Buffs bred and reared on the Farm.

Also **Blue Leghorns**; winners with own bred birds in 1910, 2 Challenge Cups, Challenge Trophy, 15 Firsts (including Dairy, Manchester, and Club Shows), 8 Specials, 10 Seconds, and 7 Thirds.

Also **Buff Rocks**; winners with birds bred and reared on the Farm in 1910, 10 Firsts, 3 Specials, 12 Seconds, 2 Thirds.

Also **Blue, White, Black, and Partridge Wyandottes**; winners in 1910 with **Blues**, 5 Firsts (including Royal Palace, and Club Shows), 5 Seconds, 15 Thirds (including Dairy, Palace, and Club Shows); with **Whites**, 8 Firsts, 3 Specials, 2 Seconds, 6 Thirds (including Dairy); with **Blacks**, 4 Firsts, 10 Seconds, 4 Thirds, and Special; with **Partridges**, 3 Firsts, 2 Seconds, 4 Thirds, and in 1909, 2 Club Cups, 9 Firsts, and United Wyandotte Club Cup, Crystal Palace.

Also **Rhode Island Reds**, **Blue and Buff Orpington Ducks**, **Blue and Bronze Turkeys**. Stock, Eggs, and Day-old Chicks in Season.

ments. It will undoubtedly do something towards spreading more widely this branch of poultry-keeping, more especially among smaller farmers who have not enough land to maintain in health breeding turkeys. We can see no reason why many of these, who otherwise would be debarred, might not buy a dozen chicks and rear them—that is, wherever their land is suitable, and they are able to devote the necessary time and attention. Larger farmers may also prefer this method, especially as the keeping of stock birds is obviated, and the cost of the chicks will not be greatly in excess of herding a flock of breeders all the year round. Where, however, larger numbers are to be bred, then the latter is to be preferred, and it is cheaper.

Dispatching the Chickens.

Ordinary chicks are dispatched in boxes, but in the case of day-old turkeys the plan which has proved most successful is to send with them a hen, for which purpose a broody that has covered the eggs should be selected—that is, if they are to be sent any distance. These should be packed in a hamper well bedded with hay. The method has proved most successful, and can be recommended for general adoption. As in the case of chickens and ducklings, experience has shown that the birds travel much better at the age named above than they do when older.

An Inside View.

Farmers have been so often criticised for their inattention to poultry by others than of their own class that it is refreshing to find home truths being told by a practical agriculturist, a Scottish farmer. At a recent meeting of the Agricultural Discussion Society of Aberdeen University, Mr. William Stewart, of Fyvie Castle, did not fail to show that he, at least, has recognised the important place which fowls may be made to occupy in the work of farming, and his observations were eminently practical. Some of his sentences were so striking that they deserve to be given prominence, and we, therefore, quote them :

It was those who had not the land who knew most about the subject, whereas it was the people who had the ground who ought to go in for poultry-rearing on a large and business-like scale.

* * * * *

A farmer should employ a poultryman just as he did a cattleman.

* * * * *

A farmer with two or three hundred acres of land should engage a poultryman at £1 a

week, and have twenty-five houses, each holding eight or nine fowls, so that the erections could be shifted daily.

* * * * *

Farmers cried out about the rents and other things, but in the main they were too well off to trouble about going in for poultry on a sound, sensible scale.

* * * * *

If farmers would give proper attention to the rearing of poultry they would find it would pay them as well as cattle and sheep; even as well as Shorthorns.

Scottish farmers have been laggard in this branch of agriculture, but they are now awakening, and it is evident that the Departmental Committee which reported a couple of years ago has roused some of them to action, and that, in spite of the prosperity found on all sides, things are moving forward in a most satisfactory manner.

The Training of Poultrymen.

Recently we have had several inquiries for poultrymen capable of handling practically substantial flocks of fowls kept for market purposes. In one or two instances we have been able to help in the way indicated, but it is evident that the supply is comparatively small as compared with the present demand. Men who desire to occupy better positions than these are obtainable, some of whom are excellent, others doubtful, for whom there is a moderate demand. They, however, are not what we mean. For big plants managers are essential, though those whose experience is sufficient to enable them to take charge of such establishments are few and far between. To attain success they require an efficient staff of ordinary workers, and it is the latter which are so difficult to find. Only the other day a western farmer told us that he had kept as many as two thousand hens, but his main difficulty was in finding reliable men to take charge of them. He could get dairymen, cowmen, carters, and stockmen, but not the same class for poultry. It is certain that the industry will fail to develop as it should until there is a greater supply of efficient labour. Much is due to the fact that most of our farmers have never attempted to train men for poultry as they do in other branches, and consequently opportunities for obtaining the necessary experience have been wanting. Further, our educational system has tended to produce poultry specialists rather than poultrymen. Whether the difficulty can be overcome by apprenticeships remains to be seen, but it has to be faced one way or the other.

IRISH PRODUCTION AND EXPORTS OF EGGS AND POULTRY.

HOW THE INDUSTRY HAS GROWN.

By "STATISTICIAN."

THE agricultural statistics of Ireland during the last two decades have shown a steady advance in the number of poultry kept in that country, though these do not by any means tell the whole story. Anyone acquainted with Ireland twenty-five years ago will remember that over the greater area of the land, save in a few of the Ulster Counties, the class of fowls kept was wretched in the extreme, small in size, lacking in vigour and productiveness. To realise a few more pence for chickens the bigger and better specimens were sold, and only the later hatched, the dwarfed or stunted birds kept for breeding. One of the first steps taken was to improve the quality and increase the relative output by the introduction of superior breeds. Thus the whole character of the fowls has been largely changed. An improvement in the economic conditions of the people has led to an equal advance in the class of poultry kept, and the latter has, in turn, reacted in helping forward the former. Hence in dealing with the statistics we have to keep in view that production has proceeded at a greater ratio than numbers of poultry, as will be seen later.

The published figures, taken from official returns, since 1887, are given below for every third year :

NUMBER OF POULTRY IN IRELAND.

YEAR.	TURKEYS.	GEES.	DUCKS.	FOWLS.	TOTALS.
1887..	909,799	2,139,639	2,930,171	8,482,100	14,461,709
1890..	1,026,572	2,211,146	3,001,617	9,171,774	15,411,109
1893..	1,031,928	2,177,227	2,909 252	9,978,278	16,096,685
1896..	1,090,539	2,142,186	2,973,233	11,339,813	17,545,771
1899..	1,120,464	2,011,286	3,014,657	12,036,584	18,232,941
1902..	1,038,472	1,836,195	2,947,813	12,681,227	18,503,707
1905..	NOT STATED.				18,976,862
1908..	1,051,446	1,836,195	3,477,143	17,663,227	24,030,099*
1910..	1,060,742	1,780,380	3,367,578	18,130,315	24,339,015*

* Due in a great measure to a more complete record of young birds.

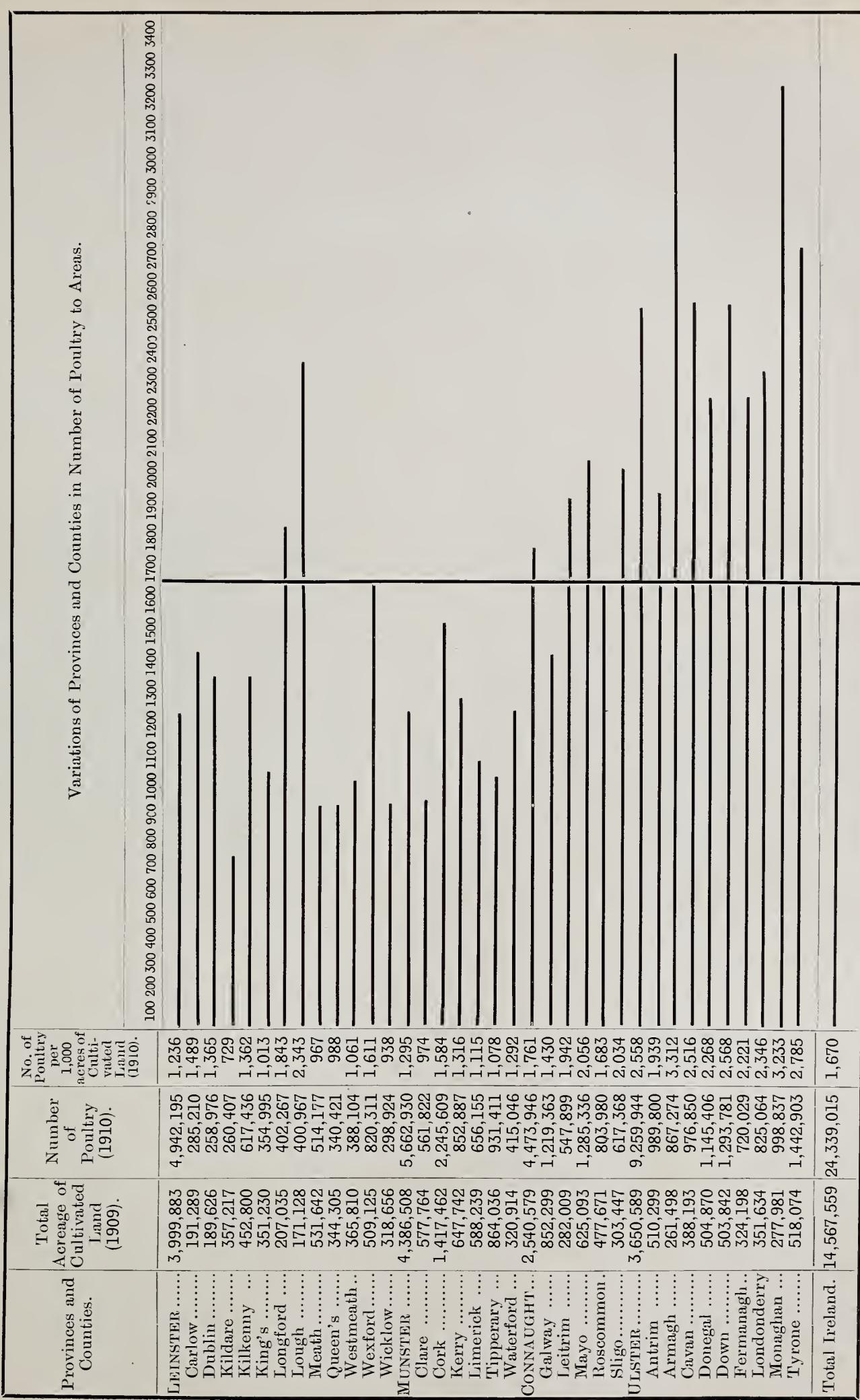
From the above it will be seen that turkeys increased from 1887 to 1910 by 150,943, or 16.59 per cent.; geese decreased by 359,259, or 16.79 per cent.; ducks increased by 437,707, or 14.93 per cent.; fowls increased by 9,648,215, or 113.74 per cent.; and that the increase in totals was 9,877,306, or 68.3 per cent. It is evident that Ireland is remarkable in the balance maintained between the respective classes of poultry.

Numbers, however, are not everything. We have to take into account area of land in order to appreciate the value of any branch of farming, relatively to the stock kept or the value of products. I have therefore extracted the figures from the official statistics, taking (1) the acreage of cultivated land (arable, hay and grass) in each province and county for 1909, as that is the last year for which returns have been published; (2) the number of poultry for the same areas in 1910; and (3) from these have worked out the average number of poultry per 1,000 acres of cultivated land. The figures and results are shown in Diagram I., which by means of the horizontal lines indicates the relative number of poultry to the areas in each province and county. The vertical line at 1,670 is the mean of the entire country.

It will be seen that two provinces, Connaught and Ulster, are above, and the other two, Leinster and Munster, are below the mean; and that of the counties fifteen are above, and seventeen are below the mean. Notable is the fact that Ulster stands easily ahead, and that every one of its nine counties is above the average of the whole country; that in Connaught only one out of six counties is under the general average; that in Leinster two of its twelve counties are above the mean; and that of the six Munster counties all are below the mean, though Cork nearly approaches it. Armagh heads the entire list with 3,312 poultry per 1,000 acres of cultivated land, followed closely by Monaghan, both in Ulster; whilst Kildare, in Leinster, is lowest with 729 poultry per 1,000 acres of cultivated land.

If in the whole of Ireland the number of poultry was equal to the average of Ulster, production would be 53 per cent. greater than at present, and should represent an increase of output to the value of £2,650,000 per annum; and if the general average were brought up to that of Armagh, the value would be practically doubled, representing an increase of output of £5,000,000 per annum. That is what might be done and ought to be attainable.

SHOWING THE RELATIVE NUMBER OF POULTRY IN IRELAND (1910) PER THOUSAND ACRES OF CULTIVATED LAND.



In a country like Ireland the importance of any industry is largely measured by its exports. Fortunately, we have now official figures which show the extent of traffic in eggs and poultry. I cannot, however, quote these before 1904, as statistics were not published prior to that date. The only previous estimate made was for 1887, published in "Popular Poultry," one of the series of handbooks issued by the *Freeman's Journal*, Limited, and written by Mr. Edward Brown, F.L.S. The information given was obtained from the various points of shipment as follows :

EXPORTS FROM IRELAND, 1887.

			Tons.
Dublin	...	...	10,644
Belfast	...	...	6,944
Londonderry	...	...	6,750
Cork	...	...	3,892
Greenore	...	...	2,612
Waterford	...	...	2,050
Dundalk	...	...	505
Newry	...	...	393

Representing about 33,000 tons. In the book named the values were estimated as under :

Eggs	...	...	£1,466,666	13	4
Poultry	...	...	146,666	13	4
Total	...	...	£1,613,333	6	8

If these figures were correct—and it may be assumed that they were near the mark—the progress made as shown below is indeed remarkable.

Quantities are always more reliable than values, as the latter vary in accordance as prices go up or down. I therefore give these in diagrammatic form (Diagrams II. and III.), from which it is easy to see the trend of things. The one dealing with eggs reveals that from 1904 to 1907 there was a steady and rapid rise, amounting to no less than 1,161,785 long hundreds, or 21 per cent. In 1908 and 1909 there was a decline, and the last-named year was 312,885 long hundreds below 1907, or about 5 per cent. The reason for this I am unable to suggest. Great though the advance has been during the last ten or fifteen years, as revealed by the increase in the number of poultry kept, it is scarcely likely that the limit of production has been reached, and therefore we may accept it as a slight check after the growth of the previous four years. Probably this resting stage may precede times of greater growth. The total bulk in 1909 was nearly 51,000 tons.

With the exception of 1908, when there was a slight reduction, probably due to a bad season, the exports of poultry have steadily advanced, as shown in Diagram III. given herewith, and in 1909 had increased over 1904 by 75,685 cwts., or nearly 33 per cent., more

than compensating for the decline noted in eggs during the two last years recorded. That is satisfactory in the extreme. No better climate exists in the wide world than that of Ireland for the production of high-class table-poultry, and the fact that it now sends as much poultry to Great Britain as all the rest of the world combined is important. Such is an interesting fact when we remember that the supplies of Colonial and foreign poultry have steadily declined for the last three years. Further, in comparing values, it must be remembered that the foreign imports are valued at the port of debarkation, whereas the Irish figures represent values at the place of exportation in Ireland.

As the ultimate end of egg and poultry production is hard cash, the values are important, as taken from the returns issued by the Irish Department of Agriculture :

VALUES OF EXPORTS FROM IRELAND.

YEAR.	EGGS.	POULTRY.	TOTALS.
1904...	£2,205,526	£645,358	£2,850,884
1905...	2,515,611	696,924	3,212,534
1906...	2,727,410	725,441	3,452,851
1907...	2,781,500	847,247	3,628,747
1908...	2,729,147	797,376	3,526,523
1909...	2,863,221	857,276	3,720,497

To make the figures more appreciable, I have drawn Diagram IV., which reveals that, excepting in 1908, when there was a slight decline, the total cash received has steadily increased. This is in conformity with the advance in values all over the world. In 1909 the Irish people received £135,811 more for upwards of six and a half million eggs fewer than in 1906.

The average declared values of eggs are :

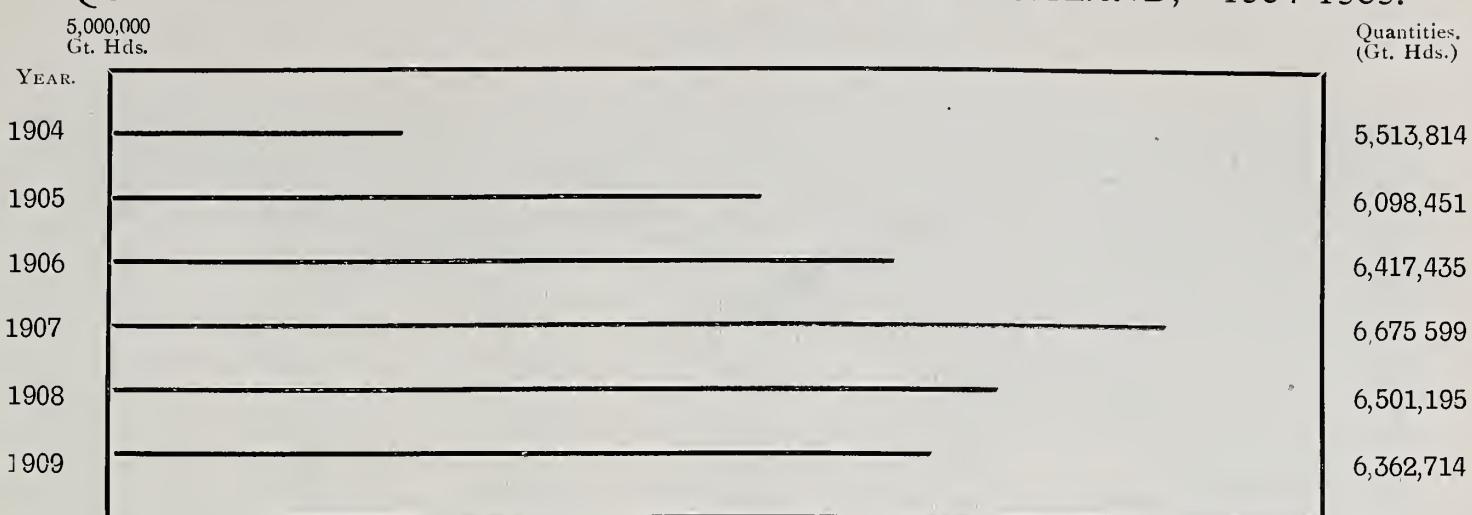
1904	...	...	8s. 0d. per gt. hhd.
1905	...	...	8s. 3d. "
1906	...	...	8s. 6d. "
1907	...	...	8s. 4d. "
1908	...	...	8s. 4 $\frac{1}{4}$ d. "
1909	...	...	9s. 0d. "

I find that the declared values of poultry shipped during all these years works out at 56s. per cwt., or 6d. per pound. It would appear either that Irish poultry have neither advanced nor receded in value for six years, which is unacceptable, or that, for sheer indolence, an all-round price has been fixed and applied regardless of actual quality and value. I suspect it is the latter. If so, it is time a better system were adopted, as the usefulness of returns is destroyed if they are incorrect.

It is necessary to state, however, that the export returns given above do not include the parcel post traffic, of which in 1909 1,120,000 packages of butter, eggs, and poultry were sent, or a total of 30,000 cwts., of which an estimate has been made that eggs and poultry

DIAGRAM II.

QUANTITIES OF EGGS EXPORTED FROM IRELAND, 1904-1909.



dispatched by this means have an annual value of £40,000.

We are now able to form something like an approximate idea as to the value of the poultry industry in Ireland. The main difficulty is with that portion consumed in the country. In Great Britain the average consumption of eggs and poultry per head of the population is said to be 11s. per annum. Taking into consideration the fact that Ireland is a poorer country, and that the standard of living is lower, I shall not exaggerate if we calculate upon the basis of half that amount—namely, 5s. 6d. per annum, all of which, save the imports recorded below, are produced in Ireland. If that be correct the total consumption in Ireland would be £1,237,500, from which must be deducted imported eggs (£34,865), poultry (£14,403), leaving a

balance of £1,188,232. The total production would, therefore, be:

Exports : Eggs	£2,863,221
Poultry	857,276
Feathers	32,968
Parcels Post...	40,000
Consumed in Ireland.....	1,188,232
Grand Total.....	£4,981,697

Thus the poultry crop of Ireland is practically of the value of five million pounds sterling per annum. Upon the basis of population in Great Britain and Ireland respectively, taking the last census (1901), and estimating the poultry crop of the larger island at £10,000,000 per annum, it will be seen that the relative production per head of the population is as follows :

Great Britain.....	£0 5s. 5d. per annum
Ireland	1 2s. 3d. , , ,

DIAGRAM III.

QUANTITIES OF POULTRY EXPORTED FROM IRELAND, 1904-1909.

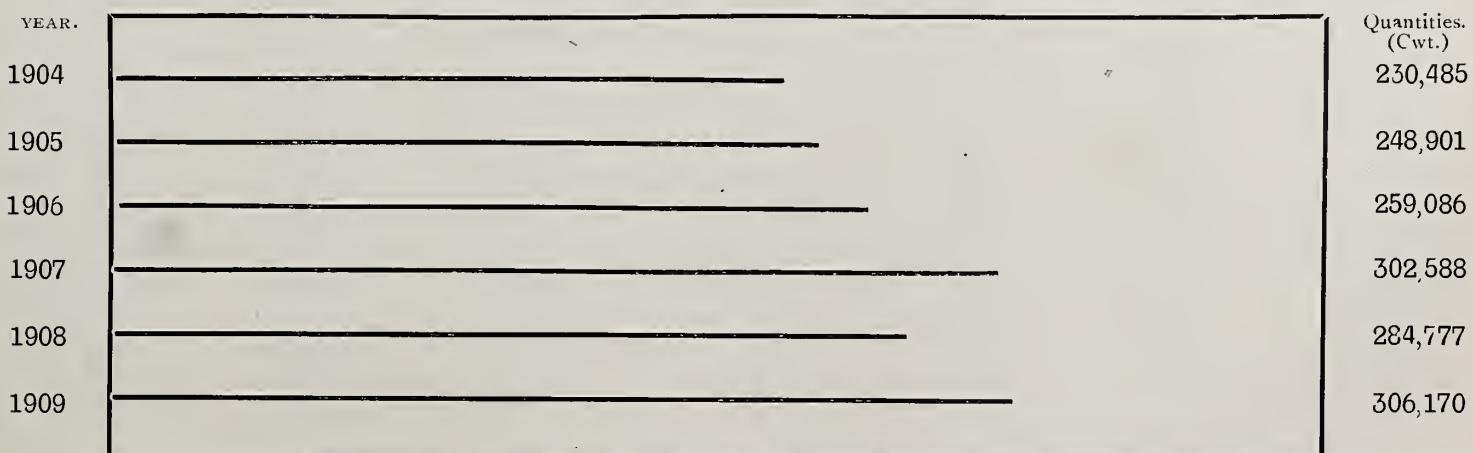
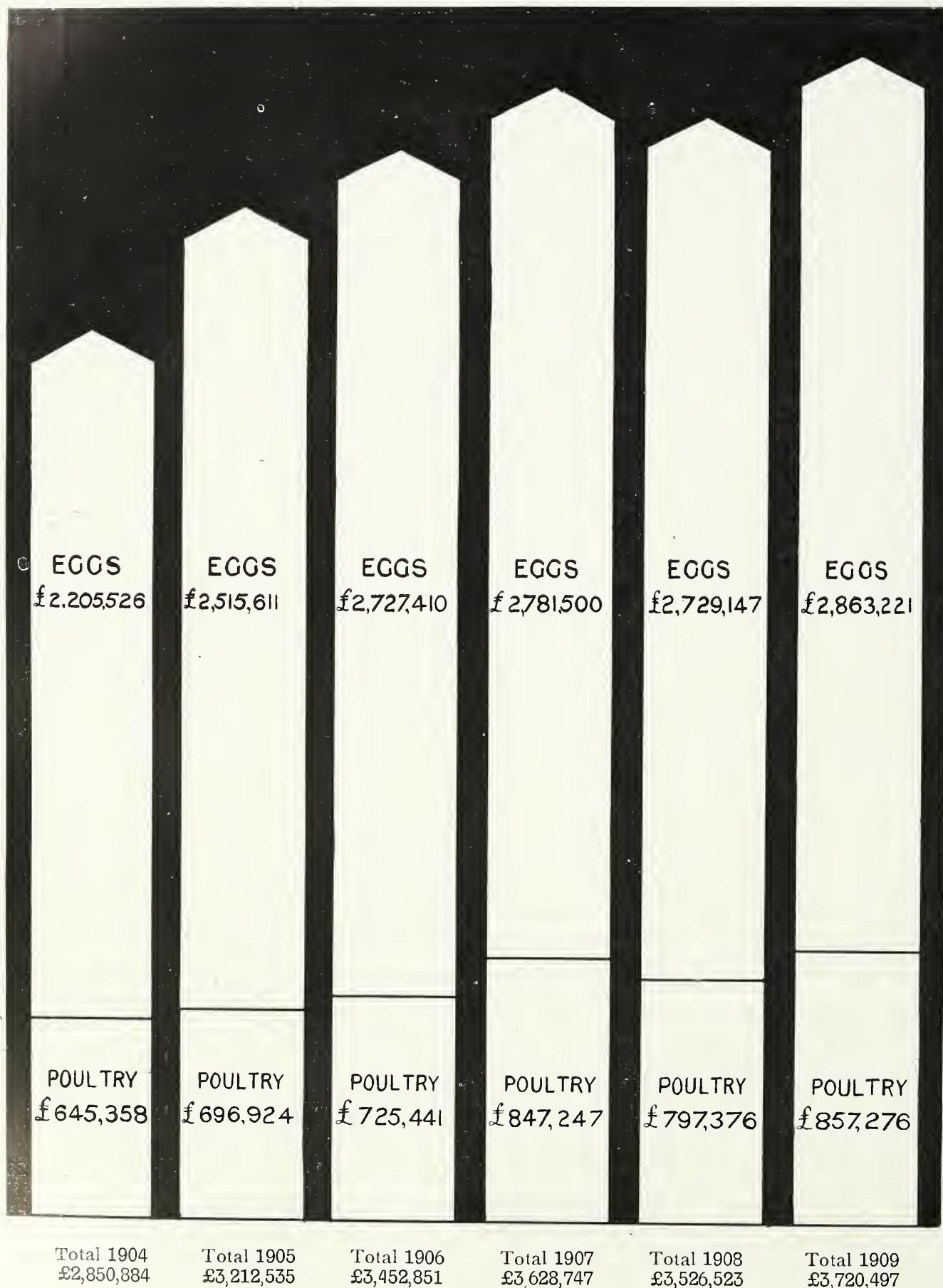


DIAGRAM IV.

SIX YEARS' EXPORTS FROM IRELAND OF EGGS AND POULTRY, 1904-1909
(VALUES).



Thus the pro rata production in Ireland is more than four times as great as in Britain. One factor is that a much greater number of the people in England, Scotland, and Wales are engaged in commercial and industrial pursuits, as Britain is to a larger degree a consuming rather than a producing country. The figures given are, however, of interest.

It only now remains for me to show the comparisons between poultry and other agricultural products. In the ILLUSTRATED POULTRY RECORD of October, 1908 (page 19, Vol. I., No. 1), this question was dealt

with at length in respect to the returns for 1907:

VALUES OF EXPORTS FROM IRELAND, 1909.

Cattle	...	...	£10,689,356
Eggs and Poultry	...	...	3,793,465
Butter	...	...	3,625,111
Pork and Bacon	...	...	3,562,850
Swine	...	...	1,451,605
Horses	...	...	1,369,395
Sheep and Lambs	...	...	1,357,019

Cattle stand easily first, and if swine be included with pork and bacon, the pig ranks second, with poultry third, greater than butter, sheep, and horses.

THE IRISH POULTRY INDUSTRY.

By F. B. NASMYTH-MILLER.

IT is now freely acknowledged that poultry-keeping has made rapid and steady advancement in Ireland during recent years. The importance of this industry to the farming community cannot be over-estimated, and it is satisfactory to be able to record that there are many poultry-keepers in the country to-day who could testify to the undoubtedly profitable character of this pursuit when proper methods are adopted. Of all the minor branches of agricultural work none offers greater inducements than poultry-keeping. The outlay in capital is small, the returns come quickly to hand, the demand is unceasing, and good quality produce usually commands satisfactory prices. The strongest point in favour of industrial poultry-keeping is that it can be carried on as an adjunct to general farming without interfering with the latter in any way. In addition, as much of the food required is produced on the farm the farmer can feed his birds at a comparatively low cost. From a review of the figures relating to the exports of poultry products the marked progress that has been made will be apparent. In the exports of agricultural produce from Ireland eggs and poultry now hold second place in point of value. Ireland now occupies the premier position as supplier of these commodities to Great Britain, the total value of exports being estimated at £3,720,497 for 1909. Adding thereto the value of feathers exported, amounting to £32,968, a total value of £3,753,465 is recorded. During the past twenty years the trade in poultry products has more than doubled itself. The following figures

showing the quantity and value of eggs, poultry, and feathers exported for the years 1904 and 1909 may be of interest:

	QUANTITY.		VALUE.	
	1904.	1909.	1904.	1909.
Eggs	5,738,129 Gt. hnds. cwts.	6,362,714 Gt. hnds. cwts.	2,044,208 £	2,863,221 £
Poultry	278,553	306,170	779,948	857,276
Feathers	12,153	15,457	36,459	32,968
			£2,860,615	£3,753,465

These figures, however, do not represent the actual value of the eggs and poultry industry to the country. There is in addition a considerable parcel post trade done, and although it is difficult to determine its approximate value, I think £35,000 would be a reasonable estimate.

Imports of eggs and poultry into Ireland are comparatively small, the estimated value for 1909 amounting to £49,208 only. It is necessary, therefore, in arriving at the true value of the industry to recollect that the export merely represents the surplus after the home demand has been supplied. From a monetary point of view Ireland's most serious competitor is Russia. Russia's exports to Britain, especially of eggs, are increasing. Last year the value of the imports into Britain of eggs from Russia exceeded that of Irish supplies by about £500,000. On the other hand, British imports from Ireland of poultry exceeded in value those from Russia by upwards of £600,000.

Ireland's exports to Britain for 1909, as

compared with those of all other countries combined, were as follows :

	Ireland.	Other countries.
Eggs.....	£2,863,221	£7,233,932
Poultry	857,276	920,697
	<hr/>	<hr/>
	£3,720,497	£8,154,629

The actual figures for 1910 are not yet available for publication, but it is estimated that in respect of poultry they will show a decided increase over the corresponding figures for 1909. In fact, it is probable that in 1910 the value of the imports into Great Britain of poultry from Ireland exceeded that of the imports from all other countries combined.

Comparing the relative positions of the poultry and dairying industries, it is found that poultry-keeping in point of value to the country exceeds dairying by close on half a million sterling.

The enormous increase in the number of poultry kept is a further indication of progress. Twenty years ago there were approximately fifteen million head of poultry in Ireland. Ten years later this figure had increased to over eighteen and a half million. It is, however, during the last six or seven years that the increase has been most marked. The following table gives the number of each class of poultry in Ireland on June 1 for the years 1904 and 1910 :

Year.	Turkeys.	Geese.	Ducks.	Ordinary fowl.	Total No. of Poultry
1904	976,238	1,725,421	2,898,785	12,656,515	18,256,959
1910	1,060,742	1,780,380	3,367,578	18,130,315	24,339,015
Increase.	84,504	54,959	468,793	5,473,800	6,082,056

The above figures, showing a total increase in six years of over six million birds, indicate in a striking manner the amount of progress that has been made in this direction. What mostly concerns me in writing this article is a consideration of the influences mainly responsible for the changes which have taken place. During the past ten years I have been associated with the development of the poultry industry in Ireland. I have visited every county in Ireland, and in many counties almost every town and village. I therefore can look back with much interest upon the development that has taken place in the industry during this period. In no country, perhaps, have greater facilities been available for the furtherance of agriculture in its various branches than in Ireland of late years. Many difficulties had to be encountered and overcome, but the strenuous pioneer work of early days has gradually been rewarded by a more healthy and increasing interest throughout the whole country. Particularly is this true in regard to poultry-keeping, and it would be hard to contemplate any

other result in view of the several forces all making for good in a common cause — in the first place the earlier efforts of the Congested Districts Board, then at a later stage the operations of the Department of Agriculture, and of the co-operative movement under the guidance of the Irish Agricultural Organisation Society.

In 1900 the Department put into operation a scheme for encouraging improvement in the poultry-keeping industry, and very little change has since been made in the policy then adopted. The following year, provision was made under this scheme for the establishment of egg-distribution stations. Two years later a further addition in the form of turkey stations was made, and in 1906 egg-distribution stations for geese were started. In 1905 a supplemental scheme, entitled "Tutorial and Practical Classes in Poultry-Keeping," was introduced. The following table indicates the progress of the work under the Department's poultry scheme since 1900 :

Year.	Coun- ties.	No. of meet- ings held.	No. of classes held.	No. of egg-distribu- tion stations.			No. of turkey sta- tions.	No. of geese sta- tions.
				Hens only.	Hens and ducks.	Eggs distri- buted, dozens.		
1900-1....	4	223	—	—	—	—	—	—
1901-2....	12	1,134	—	36	—	4,103	—	—
1902-3....	22	2,231	—	220	—	18,040	—	—
1903-4....	32	3,185	—	346	46	40,857	181	—
1904-5....	30	2,662	—	333	129	49,191	328	—
1905-6....	30	2,024	629	315	180	52,409	404	—
1906-7....	30	1,367	892	303	205	51,378	460	68
1907-8....	30	895	1,474	305	233	53,919	467	92
1908-9....	31	677	1,402	328	261	63,471	497	130
1909-10 ..	32	588	1,522	337	282	65,187	532	140

During the year ended September 30, 1910, thirty-three instructors were employed, and the scheme was in operation in every county save Dublin. The duties of an instructor include the delivery of courses of lectures on poultry-keeping, conducting practical classes, visiting poultry-keepers, inspecting egg and turkey stations and generally assisting in everything appertaining to the promotion of poultry-keeping. The work of the first few years was necessarily of a pioneer character, the chief feature of which was the delivery of lectures. In most counties, however, instruction by means of tutorial and practical classes has now largely superseded lecturing. The time came when interest in the lectures commenced to decline; the lectures had served their purpose, and circumstances demanded a more intensive form of instruction. The tutorial classes are fast becoming very popular and are undoubtedly producing beneficial results, which should have a lasting and far-reaching effect on the industry generally. The programme of work in

connection with these classes may be briefly stated as follows: The instructor remains at a given centre for two, three, or four weeks as the case may be, and holds one class daily of not less than two hours' duration. The instruction is essentially of a practical nature, and includes discourses aided by demonstrations, followed by practical work in which the pupils take part. The subjects are selected according to the requirements of the district and the season of the year. Visits by the instructor to the poultry-runs of pupils and others in the district form a special feature of the work. I attach great importance to visiting, and consider it one of the most valuable portions of an instructor's work. By its means the actual needs of the individual poultry-keeper can be considered, the general conditions of management inquired into, mistakes pointed out, and improvements suggested. I should like to take this opportunity of testifying to the good work which has been done by the instructors in poultry-keeping as a body during the past ten years. Speaking from experience, the life of an instructor is by no means an easy one, and requires close and systematic work if any real benefit is to result. Long, weary journeys have often to be faced over bad roads, and frequently in unfavourable weather. I have a vivid recollection of an occasion during my early lecturing days when both my audience and myself had to submit to the pranks of the practical joker. The subject under discussion was the fumigation of chickens affected with gapes; but, unfortunately, both audience and lecturer were treated to actual fumigation through the burning of red pepper by some person of evil intent.

Under the egg-distribution scheme a premium of £5 is awarded to approved applicants—selected by the County Committees of Agriculture—who distribute during a period of six months (December 1 to May 31 following) at least eighty sittings of hen or duck eggs, twelve eggs counting as a sitting. Applicants have to conform to certain conditions. They are restricted to the keeping of one approved breed of hens or one of hens and one of ducks for station purposes, and must house, feed, and care for the birds in such manner as may be required. Eggs are usually sold at one shilling per sitting (cost of package and carriage extra) to residents in the county during the distribution period. All eggs must be stamped, and infertiles replaced if returned within one month after date of supply. The following are the breeds recognised under this scheme:

Hens—Black Minorca, White and Brown Leghorn, Plymouth Rock, Orpington, White Wyandotte, Salmon Faverolle, and Sussex.

Ducks—Indian Runner, Aylesbury, Pekin, and Rouen.

The distribution of geese eggs is carried out on similar lines. An applicant is restricted to one pen of birds, a gander and three geese of the Embden breed, and must sell not less than twelve sittings of eggs to earn a premium of £2. Three eggs constitute a sitting, for which the charge is 1s. 6d.

Under the turkey scheme a premium of £2 is awarded to the keeper of an approved American Bronze stock turkey-cock serving at a fee of sixpence per service at least twenty hens other than those belonging to the owner of the bird.

It is, I think, generally admitted that the egg-distribution and turkey schemes have worked well and are producing satisfactory results. They were formulated with the object of providing poultry-keepers, farmers, and cottagers in particular with a convenient and inexpensive means of improving their stock of poultry. To prove that much has been accomplished in this direction one has but to note the improvement that has been effected, firstly, in the class and quality of the general stock of the country, and secondly, in the production. Although instances may be few in which the stock of the average poultry-keeper is entirely pure-bred, a very considerable number of pure-bred birds, especially male birds, are to be seen on most farms. The chief aim of the egg-distribution scheme is to enable poultry-keepers to grade up the all-round quality of their poultry, towards which end the maintenance of pure-bred male birds is the principal factor. Whilst fully recognising the worth of pure breeds, I am personally a strong advocate of crossing for the farmer's purposes. It is hardly necessary to state that crossing must be conducted with care and on right lines. Indiscriminate crossing, although not so common as it used to be, is still largely practised, and is a great mistake. It has been said by some that the scheme for distributing eggs of pure breeds fails largely inasmuch as it does not secure any definite system or method in the subsequent breeding of the birds. Such argument cannot, however, be seriously entertained. No scheme of improvement can succeed unless self-help is forthcoming, and poultry-keepers who do not take advantage of opportunities afforded them are scarcely worthy of consideration. The poultry scheme, both as regards the improvement of breeding and the giving of instruction, offers exceptional facilities, and poultry-keepers are themselves alone to blame if they disregard its advantages. In some counties progress is, of course, more noticeable than in others; but this is only natural. On the whole, better methods

of breeding and management prevail. The industry is receiving more consideration at the hands of the agriculturist, and the more practical of our farmers are moving in a direction that would not so very long ago have been deemed utterly useless. One of the greatest difficulties in the line of progress is that of overcoming the apathy and indifference on the part of the men-folk; whilst much success has been attained in this respect, there is still a great deal to be accomplished. The development of industrial poultry-keeping offers tremendous possibilities, and it is on the farmer and cottager we must depend in this connection. Individual enterprise for the production of eggs and poultry on anything approaching a commercial scale has not been attempted in Ireland, and I do not anticipate any special extensions in this direction. More attention is perhaps given to the industry by the smaller rather than the larger farmer. By this I do not suggest that the industry is not profitable to the larger farmers; but I consider the smaller farmers and cottagers are for many reasons able to obtain more satisfactory results. My experience is that the larger farmer does not give the same personal attention so necessary to success.

Referring to the question of breed, it will be observed that the number of breeds eligible under the poultry scheme is limited. In this there is a special object. It is, I think, generally recognised that more satisfactory results follow where the breeds of poultry used in a district are restricted in number. The use of one breed tends to secure uniformity in the produce, provided such breed is suited to conditions and requirements. Doubtless there are several breeds and varieties not included which have much to recommend them, but those selected have been up to the present found adequate to existing needs.

The following return should prove of considerable interest, as it shows the extent to which the different breeds are kept at the egg-distribution stations throughout the country. The figures refer to the current year's scheme:

White Wyandotte	kept at	118 stations
White Leghorn	"	115 "
Barred Plymouth Rock ..	..	107 "
Black Minorca.....	"	95 "
Brown Leghorn	"	75 "
Faverolle	"	50 "
Buff Orpington	"	41 "
Light Sussex	"	27 "
White Orpington	"	19 "
Red Sussex	"	6 "
Speckled Sussex.....	"	3 "

Very little explanation of these figures is required. It will be seen that the Leghorn, taking the combined total of the two varieties,

is more largely kept than any other breed. It is chiefly kept in the Western, North-Western, and South-Western counties, where egg-production is the main requirement. There is, however, a tendency of late towards the introduction of more of the general purpose varieties, with a preference for the White Wyandotte. It is not surprising to find this breed at the head of the list for any single variety, as, like the Leghorn, it has proved itself extremely hardy and specially suited to the colder and more exposed districts, these advantages compensating in a measure for the somewhat small size of the egg produced, which is its chief failing. This is, however, a matter which can be, and is being to some extent, remedied. The Barred Rock also merits much popularity and suits most districts. As winter layers this breed, the White Wyandotte, and also the Buff Orpington give excellent results. The latter breed was at one time very largely kept, but it has lost favour of late, for which I believe its inclination to excessive broodiness is mainly responsible. The Faverolles have not attained the position I at one time expected, although I consider them an excellent all-round farmer's fowl as a pure breed. Sussex are of comparatively recent introduction to Ireland and are giving satisfactory results. There is an increasing demand for this breed in districts where the improvement of table qualities is the chief consideration.

The Indian Runner is the chief breed of ducks kept, and its great popularity is altogether due to its remarkable powers as an egg-producer. There are comparatively few stations at which the other approved breeds of ducks are to be found.

During the last few years the Department have been receiving from farmers and other poultry-keepers laying records of flocks of pure-bred and cross-bred hens. Very considerable interest is taken in these returns, which is specially gratifying considering that the work is entirely voluntary on the part of the contributors. Details of the results of the keeping of these records have been published from time to time in the journal of the Department. That these records form useful and instructive data is unquestionable, but their chief value concerns the record-keepers themselves. The keeping of an egg record furnishes direct evidence of the productiveness of a flock of hens and provides the poultry-keeper with opportunities of studying results and improving his methods. If this work produced no other effect than to set people thinking, the efforts made to promote the keeping of these records would not have been made in vain.

A further step in record-keeping was taken

last year in the form of laying records by means of trap-nests. The necessary requisites were supplied by the Department free of charge to twenty-five selected persons, who undertook to keep, for a period of two years, a continuous record of the number of eggs laid by each hen from a stipulated number of pure-bred birds.

Another scheme under the Department's operations deals with the poultry-fattening industry. In districts where suitable conditions exist, both as regards the quality of the fowls and facilities for conducting the work, assistance is given to suitable applicants in the form of a subsidy for a given period (usually one year) towards the wages of a qualified poultry fattener.

At the Department's Poultry Fattening Station at Avondale, Rathdrum, County Wicklow, training is afforded young men who wish to qualify in this work. Poultry-fattening on extensive lines was entirely new to Ireland, and consequently progress has been slow. Up to the present the work has been chiefly of an experimental nature.

Considerable increase has taken place in the

number of poultry shows held throughout the country. These shows stimulate the interest in pure breeds, and up to a certain point they serve a useful purpose. It is, however, to be desired that more attention should be given to the claims of utility poultry-keepers.

The breeding of poultry also receives special consideration at most of the Department's institutions, notably at the Albert Agricultural College, Glasnevin; the Munster Institute, Cork; and the Ulster Dairy School, Cookstown. The two last-named establishments are the chief training centre for women desirous of qualifying as instructors in poultry-keeping and dairying.

I cannot bring this article to a close without making mention of the Model Poultry Farm of the Antrim County Council at Cullybackey. This farm was established in 1902 with the following objects: (1) Providing poultry-keepers in County Antrim with a practical means of studying improved methods of poultry-keeping; (2) supplying hatching eggs and stock birds of pure breeds of poultry; and (3) producing first-class laying strains of fowls. Its efforts have been rewarded with considerable success.

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ANATOMY OF THE TURKEY.--III.

By NELLIE B. EALES, B.Sc.

[So far as we are aware there has never been published a complete anatomy of the turkey, which has always been assumed to be identical with that of the fowl. Miss Eales has made exhaustive study of the subject, and we are glad to have the opportunity of publishing the results of her valuable inquiry with drawings.—EDITOR I. P. R.]

CIRCULATION.

The circulatory or blood vascular system, consisting of the heart and blood-vessels, has three chief functions:

1. It brings about the distribution of the food material absorbed as the result of the digestive process.
2. It is the respiratory fluid, carrying oxygen to all parts.
3. It carries waste products to excretory organs, lungs, liver, and kidneys.

The blood consists of a colourless fluid plasma, in which float minute bodies known as corpuscles. These are of two kinds, red and white. Each red corpuscle is an oval flat disc, slightly thicker near the edges, and contains an unstable substance, *haemoglobin*. This substance takes up oxygen very readily to form

red oxyhaemoglobin. As the blood passes through the tissues of the body, the oxygen becomes used up to supply the energy needed by the animal for its various life processes. In place of the oxyhaemoglobin, a substance containing carbon di-oxide is formed. The carbon di-oxide is a waste substance and is excreted by the lungs, whose function also is to supply the blood with fresh oxygen in the place of the carbon di-oxide.

The vessels which convey the blood are of two kinds. There are thin-walled vessels, carrying blood at low pressure, and known as *veins*. Generally, veins carry deoxygenated blood, from the system to the heart. The other kind of vessel is known as the *artery*. An artery has thick, highly elastic walls, and generally carries oxygenated blood at high pressure, away from the heart.

The heart is the pumping organ for the blood. It has four chambers, two on the right and two on the left side, and right and left sides are completely separated. The anterior chamber on each side is the auricle (Fig. 4, aur.); it is thin-walled, and leads to the corresponding *ventricle*. The ventricles are thick-walled, spongy, and very muscular. It is their duty to pump the blood into the arteries; the auricles only receive blood and pass it on to the ventricles.

The course of the blood is as follows. Blood is brought from all parts of the head and wing region by vessels opening into the precaval vein, a short, wide vessel opening into the right auricle (r. aur.), and from the abdomen and legs by the postcaval, which opens into the same auricle. The pressure of the blood causes the valves leading to the right ventricle (r. vent.) to open inwards, and the blood passes into the ventricle. The muscular walls of the ventricle then contract, and the blood is pumped into the pulmonary arteries (pul. a.), which convey it to the lungs. The two pulmonary arteries branch repeatedly until finally they reach all parts of the lung, and are so small that the interchange of oxygen for carbon di-oxide can go on readily. The carbon di-oxide set free in the lung is expired, while the oxygen joins with the haemoglobin in the red blood corpuscles, and the oxyhaemoglobin formed causes the blood to resume its former red colour. The blood is collected by the capillaries (as the extremely small vessels are called), which join to form the pulmonary veins. These veins transmit the blood into the left auricle of the heart; it passes into the left ventricle, and is pumped thence to all parts of the system by the arteries.

Thus the right side of the heart contains only deoxygenated blood, the left side only oxygenated blood. The circulation is a double one, there being the circle in which the lungs take part and that in which the system takes part.

Blood from the abdomen is collected into two big veins, the renal portal (r. p. v.) and hepatic portal. A portal vein is one which breaks up in a gland (here the kidney and liver respectively) on its way back to the heart. The renal portal collects blood from the tail by the caudal vein (c. v.), from the mesentery and intestine by the coccygeo-mesenteric (c. m. v.) and posterior mesenteric (p. m. v.), and from the back by the iliac veins (i. v.). The large vein thus formed sends its blood into the kidneys. Blood is collected from the legs and pelvic girdle by the sciatic (sc. v.), pubic (pu. v.), and femoral

veins (f. v.) which unite with the renal veins (r. v.) to form the *postcaval vein*. Vessels from the intestine walls unite to form the hepatic portal vein (not shown in figure), which

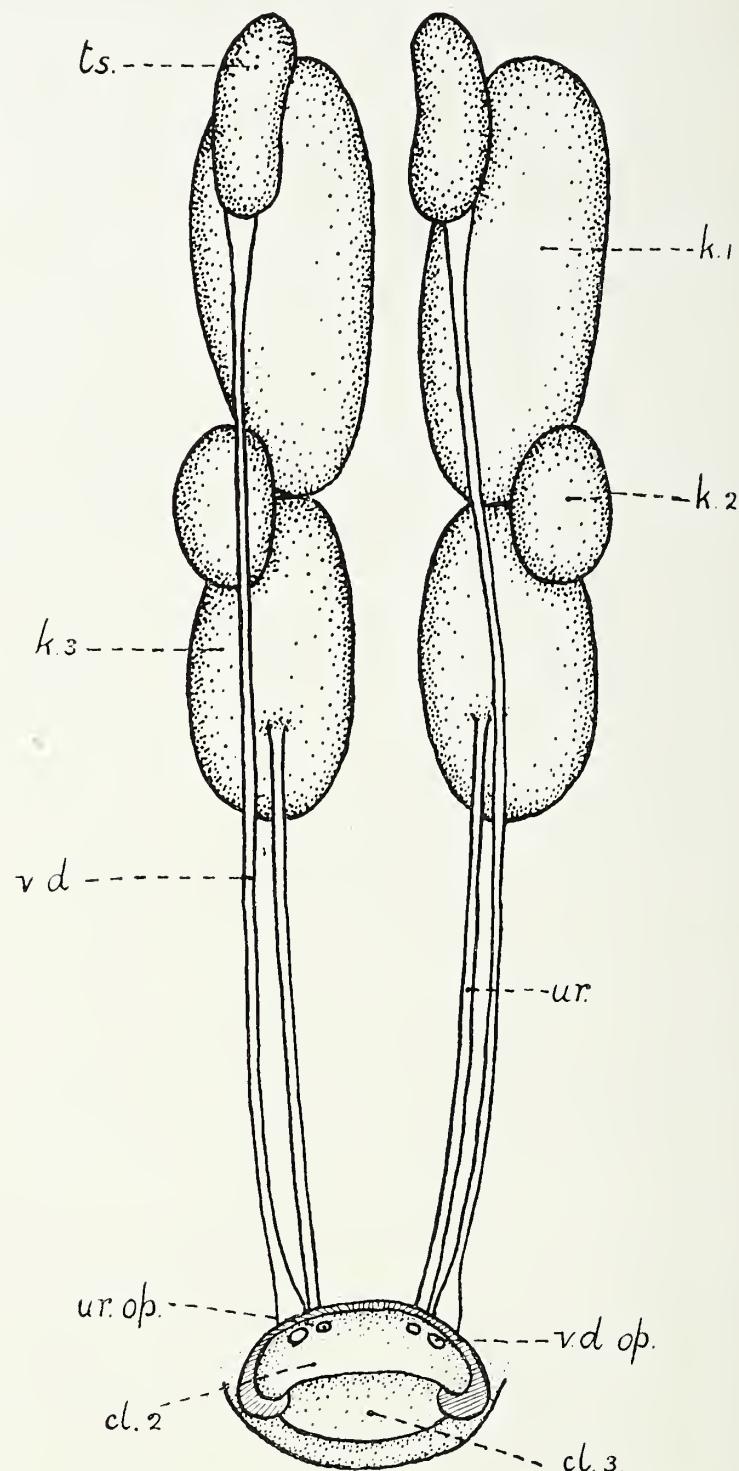


Fig. 5.—MALE REPRODUCTIVE AND RENAL ORGANS.

cl. 2, second compartment of cloaca; cl. 3, third compartment of cloaca; k. 1, k. 2, k. 3, kidney; ts., testes; ur., ureter; ur. op., opening of ureter; vd., sperm duct; vd. op., opening of sperm duct.

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splits up in the liver. Blood is collected from all parts of the liver by the two hepatic veins (h. v.) which open into the postcaval. The

latter transmits the blood into the right auricle.

Facial veins and other small ones collect blood from the head, and unite to form the jugular anastomosis (j') or junction of the jugular veins. The *jugulars* (j. v.) run the whole length of the long neck, and near the heart join with the *brachial* veins (br. v.) from the wing, the *pectoral* veins (p. v.) from the muscles of the wing, the *vertebrals* from the muscles of the backbone, and the *intercostals* from the muscles of the ribs to form the extremely short *precaval*, which opens into the right auricle.

When the blood returns from the lungs to the left auricle, it is passed on to the left ventricle, and is pumped into the great arterial trunks. This gives off two trunks, the *innominate arteries* to the head and one to the body, the *systemic trunk* or aortic arch (a. a.).

The innominate artery is very short, and sends branches to the wing and wing muscles (pectoral, p. a., and brachial, br. a., arteries), to the muscles of the backbone (vertebral), and to the head (carotids, ca. a.).

The aortic arch conveys blood to the posterior region of the body. In many animals—*e.g.*, frog, lizard—there are two arches, which join to form the dorsal aorta, but in all birds the left arch aborts and the right becomes the dorsal aorta. It sends branches to the intestine and mesentery (coeliac and antr. mesenteric arteries, co. a. and a. m. a.) to the legs and pelvic girdle (femoral, pubic, and sciatic arteries), to the kidneys (renal arteries), and to the body-wall and tail (iliac and caudal arteries).

UROGENITAL ORGANS.

These consist of kidneys and reproductive organs. In many animals (*e.g.*, frog) the products of the male reproductive organs pass through the kidneys on their way to the exterior, so that it is customary to class them together. In birds, however, this connection has disappeared.

The *kidneys* lie in the concavities of the pelvic girdle and are separated from the abdominal cavity by a membrane known as the peritoneum. Each consists of three unequal lobes (k. 1, k. 2, k. 3), and so does not conform to the usual idea of "kidney-shaped."

The function of the kidneys is to extract water and nitrogenous waste from the blood. The waste matter is collected into two tubes, the *uretus* (ur.), and conveyed to the exterior through the cloaca. The surface of the kidney presents a granular appearance due to the large number of closely-packed lobules. Each lobule

is richly supplied with branches of the renal arteries and veins and contains uriniferous tubules which ultimately open into the ureters. The tubule commences as a cup-like expansion known as *Bowman's capsule*. The bowl of the cup is occupied by a very small twisted artery, and as the blood circulates through it *urea* is extracted and passes into the tubule. The blood goes away by the real veins (r. v.) purified from nitrogenous waste, while the latter passes from the tubules into the ureters and is conveyed to the exterior.

MALE REPRODUCTIVE ORGANS.

The male organs consist of paired *testes* with their ducts. Each testis (Fig. 5, ts.) is a white kidney-shaped body, lying just anterior to the kidneys. Bundles of microscopic, motile sperms are formed by the cells of the testis. Each sperm has an oval head, containing a nucleus, the governing body of the cell, and a long vibratile tail. The rapid movements of this tail assist the sperm in its progress down the sperm duct (or *vas deferens*, v. d.) to the cloaca, through which it is conveyed to the cloaca of the female bird.

FEMALE REPRODUCTIVE ORGANS.

The female reproductive organ is the *ovary*. In the embryo bird there are two ovaries, but the right aborts early and disappears altogether. Remains of the posterior portion of its duct, however, persist as a short, blind tube (Fig. 6, r. od.), opening into the cloaca just near the opening of the right ureter.

The functional ovary (Fig. 6, ov.) resembles a bunch of grapes, and produces a large number of ova, or eggs. These are at first very minute, and always consist of one cell only. Food material (the yolk) begins to accumulate in the ovum, but the active portion of the ovum always remains close to the surface of the yolk mass. During the breeding season, ova of all sizes, from microscopic objects to large, yolk-laden spheres, are to be found in the ovary. When sufficient yolk has accumulated in the ovum, the latter is set free, and passes into the oviduct (od.). The oviduct is not continuous with the ovary, but opens into the body cavity close to the ovary by a wide funnel-shaped mouth.

Sperms, discharged into the cloaca of the female bird by the male, make their way up the oviducts, and it is here that fertilisation, as the process of union between sperm and ovum is called, takes place. The sperm is microscopic, whereas the ovum (owing to the large amount of yolk) is of relatively huge size.

One sperm enters the ovum and its nucleus fuses with that of the ovum. As the fertilised ovum passes down the oviduct, the latter surrounds it with a watery, albuminous cushion (the white), a parchment-like skin, and a porous, calcareous shell. The walls of the

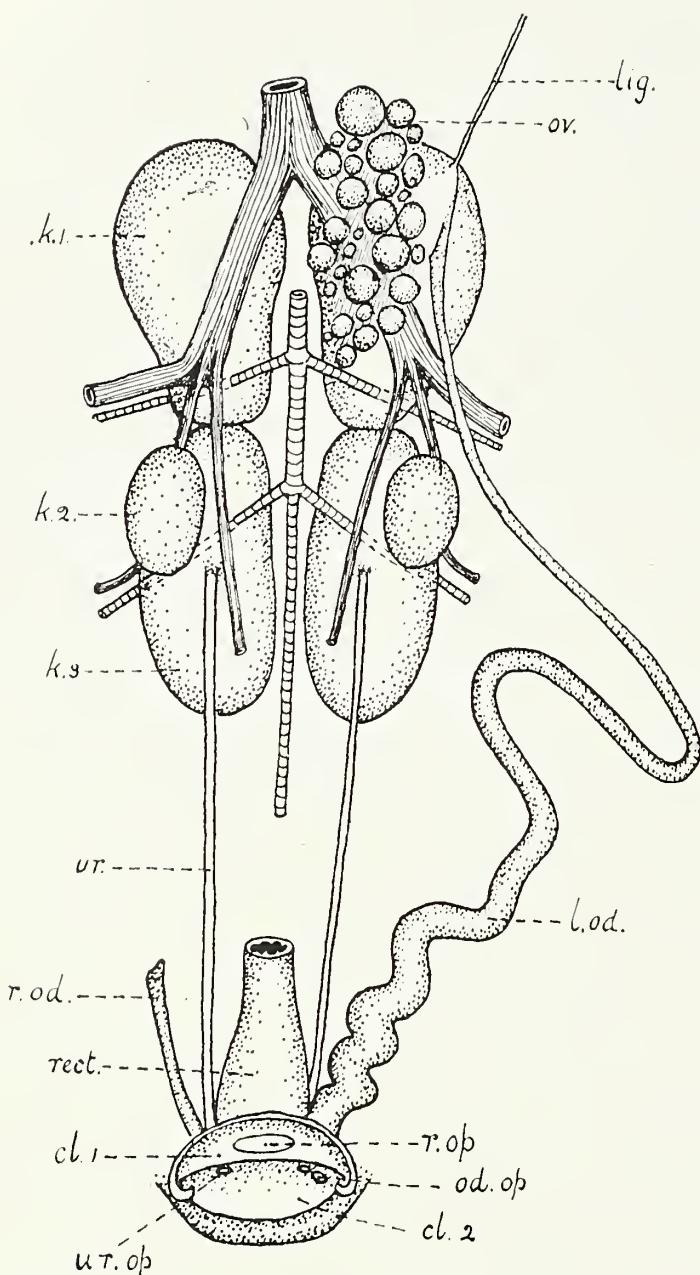


Fig. 6. FEMALE REPRODUCTIVE AND RENAL ORGANS.

cl. 1, first compartment of cloaca; cl. 2, second compartment of cloaca; k. 1, anterior portion of kidney; k. 2, middle portion of kidney; k. 3, posterior portion of kidney; lig., ligament attaching oviduct to body wall; l.od., left oviduct; od.op., opening of oviduct; ov., ovary; rect., rectum; r.od., right oviduct; r.o.p., opening of rectum; ur., ureter; ur.op., opening of ureter.

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oviduct become thick and distended during the breeding season owing to the necessity of providing the egg with these investments.

The oviduct opens into the cloaca, close to the opening of the left ureter.

PERSONALITIES IN THE IRISH POULTRY INDUSTRY.

FROM time to time we have given in our gallery of Poultry Notabilities portraits and brief sketches of some of the more prominent instructors in poultry-keeping at various colleges and under some of the Irish County Councils. Many of these have been largely responsible for the actual teaching, and the fruits of their labours are evident in the remarkable progress made in Ireland, of which some record is attempted by "Statistician" in the present issue. Others we hope to publish from time to time. It is unquestionably true that, considering its area and population, Ireland has made greater progress than any other section of the United Kingdom, and it may be accepted that no other country has relatively an equal number of poultry or a greater annual production. For a nation of less than four and a half million people to produce eggs and poultry to the value of five million pounds sterling in value annually, and to export to the extent of three and three-quarter million pounds sterling yearly, is exceptional. On the basis of population Ireland stands in the first rank.

Our present purpose is to mention those who have shared in this remarkable development to the extent of being responsible for directing the policy which has brought about this result, whether connected with the Irish Department of Agriculture and Technical Education or the societies helping to organise the trade. Without the impelling force thus given the advance noted could not have been made. That they had a good foundation on which to build is without doubt, but when the present movement began every part of the business, breeds, production, and marketing alike, were at a low ebb. Those who attend the Dublin Conference to be held on May 4 and 5, who hear and see affairs as they are, can scarcely realise how different were the conditions fifteen or twenty years ago. In anticipation, therefore, of that event, it is a fitting time to make acknowledgment of the services rendered by those who were not specially concerned in the poultry industry, but realised its importance to the well-being of the kingdom at large and the Irish nation in particular. And we are pleased to be able to present an admirable series of portraits.

THE EARL AND COUNTESS OF ABERDEEN. (See *Frontispiece*.)

THEIR Excellencies the Lord-Lieutenant and Lady Aberdeen have for many years manifested a keen interest in the extension of poultry-breeding, not alone upon their estate at Haddo, Aberdeenshire, where they had a fine poultry establishment, one of the best in the country, but wherever occupying the high positions to which they have been called in Ireland and Canada. It was during their first Irish Viceroyalty in 1885-6 that the opportunities in that country were realised, and Her Excellency helped greatly in the earlier efforts to improve the stock of poultry kept in that country. Political changes made the period of service very brief, only about six months, but during that time the foundations of developments in many directions were laid. When Lord Aberdeen was made Governor-General of Canada in 1892, another field of operation presented itself, and considerable interest was

shown in the poultry section of the Experimental Farm at Ottawa, in charge of Mr. A. C. Gilbert, the doyen of Canadian poultry instructors. Since they returned to Dublin in 1906 Lord and Lady Aberdeen have given the weight of their great influence to extension of all branches of production, and it is a fact that the forthcoming Conference is largely due to the personal interest they have taken in it. As a further piece of evidence, mention may be made of the excellent poultry section of the annual display held at Haddo every August in connection with the Haddo House Games. Such a brief summary records but a little of the part taken by their Excellencies



MR. T. P. GILL.

in this special subject, and makes no attempt to recognise the manifold scope of their activities in support of movements for the general advancement of every section of the community.

MR. R. A. ANDERSON.

WHEN the Irish Agricultural Organisation Society was formed, the first of its nature in the British Isles, Mr. R. A. Anderson was appointed secretary, and he still holds that position—one of great responsibility, and onerous in the extreme. With the rapid extension of the movement his work has grown enormously, but who can tell what it meant in the earlier days? Then to rouse the national spirit, to meet the lethargy of those he was seeking to serve, to keep a brave heart in spite of

disappointments and failures, must have been hard in the extreme. In spite of all, Mr. Anderson has ever shown the true geniality of his race, and bravely pressed forward in his work. From the first he has believed in the possibilities of the Irish poultry industry, as evidenced by the paper read by him at the first National Poultry Conference in 1899, and the effect of the steady efforts put forth are to be seen in the results achieved. Nor are these limited to the number of egg and poultry societies in actual operation. Whatever in this direction remains to be done, it is undoubtedly true that the standard of quality in Irish eggs and poultry has been raised to a considerable extent, which is largely due to the influence exerted by the Irish Agricultural Organisation Society, and poultry-keepers owe much to its secretary, whose services are recognised by no one more than Sir Horace Plunkett.

PROFESSOR J. R. CAMPBELL.

FROM the poultrymen's point of view, Professor Campbell has risen superior to the predilections of trained agricultural experts, who in too many instances still regard poultry as unworthy their attention. As his name indicates, he is a Scotsman, trained at the West of Scotland Agricultural College, and for some time he had charge of the dairy work at Kilmarnock. Thence he went to the Lancashire County Council Farm at Hutton, where he did not stay long, as he was speedily appointed Professor of Agriculture at Leeds, where he had charge of the county poultry teaching. Here again his stay was brief, and about ten years ago he was appointed Assistant Secretary of the Department of Agriculture at Dublin. In that position he has shared largely in the development of the county teaching in agricultural subjects, and the extension of the poultry departments at Glasnevin, Cork, and elsewhere. The whole of the various instructors have been appointed during his term of office, and he has fully realised the important place which poultry occupies in the rural economy of Ireland. Without such recognition the progress made would have been impossible. Professor Campbell has had charge of the arrangements for the Dublin Conference, and we anticipate that it will amply reward his efforts.

THE EARL OF CARRICK.

LORD CARRICK occupies a responsible position under the Irish Department of Agriculture as Inspector in Great Britain of Irish produce, with a view to protection of the interests of shippers. Part of his duty has been to see that supplies have fair play on our markets, and to his initiation have been due some of the prosecutions undertaken by his department for fraudulent sale by describing foreign produce as Irish. Traders who resort to such practices do so with the object of deceiving purchasers, and of using a name which has a recognised value in certain markets. The more these frauds are discovered and the perpetrators are punished the better. Lord Carrick has taken a great amount of interest in the Dublin Conference, and has acted as representative of the department in making the arrangements so far as Great Britain's share is concerned.

MR. T. P. GILL.

AS Secretary of the Irish Department of Agriculture and Technical Instruction since it was established fourteen years ago, Mr. T. P. Gill has

occupied an influential position, though perhaps less apparent in direct influence than is generally supposed. From 1885 to 1890 he was the Member of Parliament for South Louth, retiring some time before he was called to his present office. It says much for Sir Horace Plunkett's



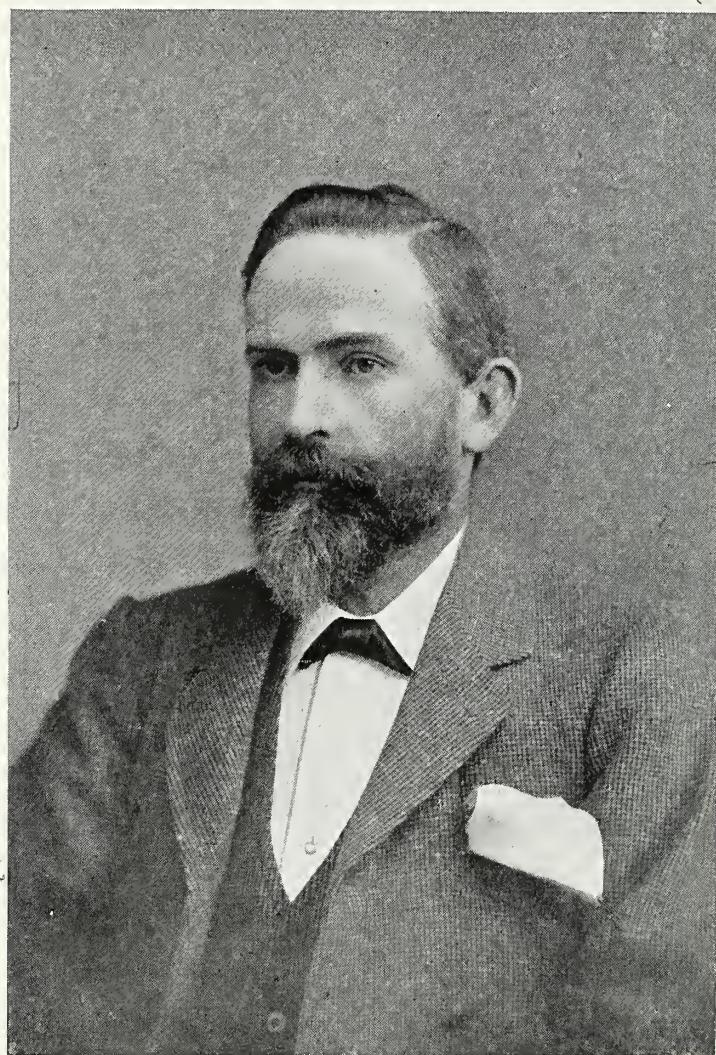
SIR HORACE PLUNKETT, K.C.V.O., F.R.S.

prescience that, although Mr. Gill and he were opponents in politics, there was no hesitation in co-operation for the promotion of the rural development of Ireland. Mr. Gill was on the Recess Committee, and wrote several of the sections in its report, which led to the establishment of the Department in 1899, and it was eminently fitting that he should be made secretary of the last-named body. That may not be of the same prominence as other offices, for a secretary's best work does not appear on the surface, but we have reason to know that Mr. Gill has in his special sphere contributed to the development of the poultry industry in Ireland by the exercise of his influence and sympathetic support.

SIR HORACE PLUNKETT, K.C.V.O., F.R.S.

THE fame of Sir Horace Plunkett is known in all lands. It is not too much to say that to him, as the great leader in the improvement of rural conditions, Ireland owes more than to anyone else, not alone for what he has personally wrought, but for the power he has possessed of inspiring others, and of drawing around him a body of determined men possessed with high ideals and boundless

zeal. Nor has this influence been restricted to his own country, for the example of what was possible in an impoverished, party-torn country as was Ireland twenty years ago has had a reactive power in Britain, America, and elsewhere. It would be impossible in a brief sketch such as this to record in the baldest manner his work and labours. Happily these are so well known as to be needless. A son of the late Lord Dunsany, he was on its formation appointed one of the Commissioners of the Congested Districts Board for Ireland, and for many years was a member of Parliament. He was founder and first President of the Irish Agricultural Organisation Society, and again holds that position. It was due to him that the Recess Committee was formed, in which an attempt was made to band together for a common purpose men of all parties, religions, and branches of thought. When, as a result of that committee's report, the Department of Agriculture and Technical Instruction for Ireland was formed in 1899, he was, by almost unanimous approval, appointed its first Vice-President, holding that position until 1907, retiring as a result of political changes. He has been a prolific writer, mainly upon the problems of his native country, and one of his books, "Ireland



THE RIGHT HON. T. W. RUSSELL, P.C.

in the New Century," whilst frank to a degree in exposing what he condemns, is full of that buoyant hope without which it would have been impossible

to overcome the obstacles to be surmounted. Poultry have formed but one item in his budget, but it has received its full meed of recognition.

THE RIGHT HON. T. W. RUSSELL, P.C.

FOR nearly four years Mr. T. W. Russell has been Vice-President of the Irish Department of Agriculture, and it is under his auspices that, for the first time in the United Kingdom, a Poultry Conference has been called together by the State authorities. Such is a suggestive and notable fact which is worthy of all praise. We have reason to know that from the first proposal that such a Conference should be held Mr. Russell has given hearty support and taken a keen personal interest in the project. Whatever success it may achieve will be partly owing to his efforts, and it is fitting, equally for that reason and his official position, that he should be President of the first day's proceedings. Mr. Russell is a Scotsman, who has lived in Ireland for many years. He first came into prominence as an ardent advocate of temperance, and was from 1886 to 1910 M.P. for South Tyrone. With his political work we have no concern, but may mention that he has held various offices under different Governments. That which he now occupies gives abundant scope for his unwearying activities, for which he has ever been distinguished.

As Chairman of the Council of Agriculture he has around him a body of men to whom are committed great responsibilities, and upon whom the future of the country to a large extent depends. A keen fighter, he has both given and received many hard knocks, but that is all in the way of daily life. How much Mr. Russell knows about poultry questions we are unaware, but from the facts stated above he evidently recognises its importance. We look to him as head of the department to make the Dublin Conference the means of advancing the poultry industry to a much higher plane, and of initiating those developments, more especially in education and research, which are essential to its further progress.

Poultry-Farming in Russia.

The Board of Agriculture have received from H.M. Consul-General at Odessa a summary of articles recently published in the *Torgova-Promyshlennaya Gazette*, in which the following refers to eggs and poultry :

Poultry-farming has made the greatest progress in the more thickly populated parts, and the export of eggs has increased from 1,686 millions, valued at £3,023,000 in 1899, to 2,845 millions, worth £6,566,000; in 1909. The increase in value is far greater than in quantity, and it is ascribed rather to the improved quality of the produce than to the general rise in food prices, though doubtless the latter is partly responsible.

Besides eggs there is a considerable export of dead fowls, the value of which rose from £834,000 to £1,509,000. In addition, feathers and down of the value of £190,000 are exported, so that the value of all poultry products amounts to £8,265,831, as against £3,857,008 in the year 1899. In spite of the increasing export and of the rising prices of poultry products, the consumption within the country increases, not only among well-to-do customers, but also among the producing peasant farmers themselves.

In many places it is thought possible that, as the land is more and more subdivided into small holdings, poultry-farming may supersede the cattle industry.

UTILITY INFLUENCES IN EXHIBITION BREEDING.

By W. M. ELKINGTON.

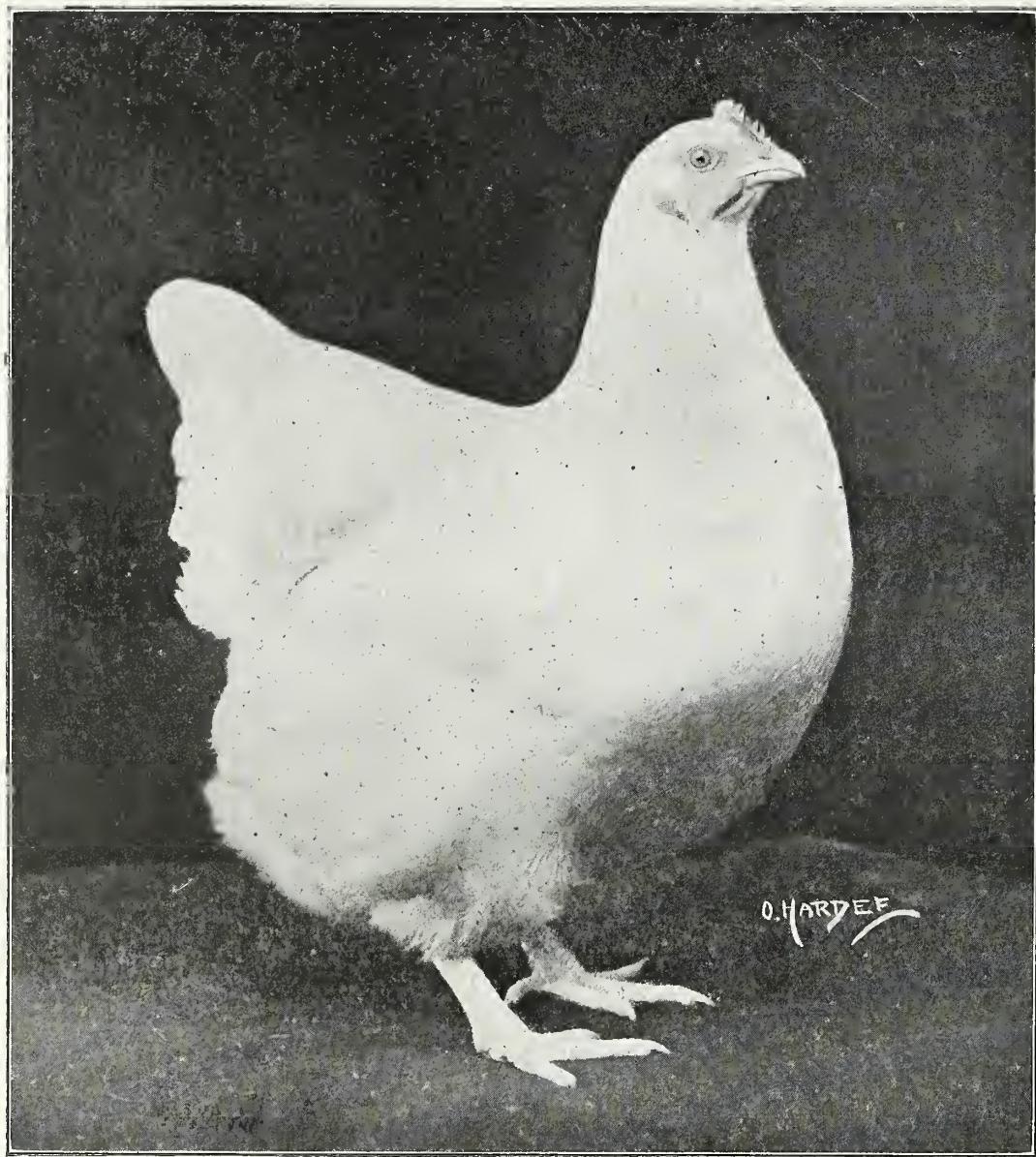
THE past decade has witnessed many developments in all branches of poultry-keeping. Vast improvements have been made in every class of utility stock, and the growth of the utility movement has even exercised an influence upon exhibition breeding, which some people regard as being directly opposed to utilitarianism. However that may be, the modern fancier has more respect for useful properties than his predecessor, and it is not because he is any less keen a fancier, for there never were more extravagant methods practised than at the present day, and Fancy breeding was never brought so near to the level of a fine art. But the simple truth is that the fancier has, as it were, to cut his cloth to suit his customers, for as the Fancy has grown and its adherents have multiplied, the characteristics of the latter have undergone a change, and in these days of fierce competition very few who call themselves fanciers are content to exist upon Fancy traits alone, but demand a considerable share of useful properties in their stock, so that the skilled breeder finds his business develop most rapidly in those directions where he is able to successfully combine show and utility traits. The out-and-out fancier is in a minority nowadays, and the breeds in which useful properties have long since been sacrificed are being starved into oblivion, whilst the more vigorous and useful breeds monopolise attention, for, as I have suggested, the majority of modern fanciers find extraneous qualities insufficient to satisfy their requirements, and so they must have productiveness to eke out the deficiency.

It is not my purpose to set up exhibition strains as being equal to line-bred laying strains as egg-producers. Individuals might, perhaps, be found to give the pedigree layers a good run; but the fact that the latter are bred solely and entirely for laying purposes places them in a position by themselves. Nevertheless, it is worthy of note that some very creditable layers are to be found among the Fancy strains, and one does not need to go far among up-to-date breeders to realise that the possession of productive properties is extensively sought. It should be noted, however, that prolificacy is more general among breeds that have not been subjected to breeding for some abnormal point. Take the White Wyandotte, for instance, which cannot by any stretch of the imagination be called a freak breed. Here you find the leading exhibition breeders proudly boasting, and with good cause, of their productive strains, which create very creditable records in winter laying besides winning prizes; and in many other varieties where breeders have not focussed their attention on some abnormality the same conditions are to be met with, with the result that these breeds have become popular with the rank and file, who, if they cannot always breed winners, find consolation in a well-filled egg-basket.

Without claiming that the successful fancier has departed from his usual methods in order to cultivate utility properties, there can be no doubt that those whose strains have demonstrated the possession of laying properties have been and are doing

their best to retain this useful trait, not necessarily by adopting the advanced methods of the utility specialist, but by avoiding those birds which are lacking in vigour and fail to come up to a certain standard as egg-producers. And, in my opinion, a factor that is of great assistance in enabling the Fancy breeder to preserve vigour and productiveness in his closely-bred stock is the very general practice of breeding from adult hens. My own experience has been that by avoiding birds that possess serious physical defects and selecting

breeds the fancier's love of size is a menace to the cultivation of productiveness. What the Black Orpington has lost in usefulness through its remarkable gain in size breeders are well aware, and if the White Wyandotte were to degenerate into the type apparently preferred by some judges—massive body and short shanks—it is certain that the productiveness that is now a natural trait in the breed would to a large extent be sacrificed. Great size is just as much an abnormality as a massive comb or some peculiarity in type or feather, and



WHITE ORPINGTON PULLET.
Bred by and the Property of the Bolton Model Poultry Farm.

well-matured hens for mating with a vigorous cockerel, the ill-effects of close-breeding may be reduced to a minimum.

It is frequently asserted that no man can successfully combine Fancy and utility properties—that he must specialise in one or the other if he means to attain any degree of success, and in many breeds that is perfectly true. As I have said, the freak varieties, which need not be enumerated, since their abnormalities identify them, lay no claim to special merit for laying purposes, and in many more

the production and maintenance of a large frame necessarily limits the amount of physical energy to be expended upon productiveness. The exhibition Buff Orpingtons are, as a general rule, smaller than the Blacks and less profuse in feather, and few will deny that they are more consistent egg-producers. In whatever variety fanciers make a fetish of excessive size (and that is possible in any breed where there is no other abnormality to concentrate attention upon) it necessarily follows that usefulness must be sacrificed to a very great extent, and that

fact provides the very best reason why fanciers of our most useful varieties should exert their influence against the practice of constantly increasing the bulk.

While it is obvious that a certain class of exhibition breeders who have attained success will not endanger their positions by relaxing their efforts in the production of show specimens in order to make a feature of utility characteristics, it is perfectly clear that every year will convince a large number of those who cannot afford to depend upon Fancy properties alone that a considerable proportion of fancier-recruits look for more useful traits than would have satisfied the fancier of twenty years ago. Even at that comparatively recent date competition was much more open, and a successful breeder had plenty of scope for working up an extensive business in Fancy stock alone, whilst his culls could always be profitably disposed of, for that was before the utility specialist became a power in the land, and in those days the fanciers' cast-offs were widely distributed for utility purposes. Now, however, amateurs and beginners are being so well instructed that the out-and-out fancier finds his culls a drug in the market, and what is more (as is evidenced by the declining popularity of the purely Fancy breeds) the proportion of those recruits who are content to breed show birds alone becomes smaller every year. This by no means presages the decline of the Fancy. It merely reflects its growing popularity, and is the direct effect thereof, for, as competition in exhibition breeding becomes keener, more people find it essential to embrace useful traits to bolster up their enterprise. And so it is that the influence of the utilitarian is likely to become more powerful year by year, and we shall find more successful fanciers advertising the useful traits possessed by their strains. The truth of this is evidenced in the fact that not a single breed or variety has come prominently to the front during the last few years unless it has been in possession of traits that appeal to the utility breeder as well as the fancier. Take such progressive breeds as the Orpingtons (Buff and White), the Wyandottes (White, Black, Partridge, and Columbian), the Black Leghorn, the Sussex, the Faverolles, the Rhode Island Red—all these having enjoyed Fancy booms of more or less intensity, and you will find that these are the very breeds which have provided the utility specialists with their best material. Other breeds have been introduced, many of them useful, but generally providing more complex problems for the exhibition breeder, and more scope for the lover of abnormalities, whilst it is a well-known fact that many old breeds whose usefulness was to a large extent sacrificed by the fanciers of past decades have gradually lost ground.

The modern fancier requires eggs for the purpose of reproduction. He must hatch early, and he needs strongly fertilised eggs from vigorous stock in the depth of winter. And since he drives a prosperous trade in eggs for hatching, and possibly day-old chicks, there is a very strong reason for cultivating the trait of productiveness. These are the influences which prompt the modern fancier to take a deeper interest in utility properties, and, as I have suggested, he is no less keen a fancier for doing so, for events have proved that we can still practise close-breeding and still produce winners, whilst retaining utility qualities in a sufficient degree to satisfy the general purpose poultry-keeper.

FANCIERS AND FANCY MATTERS.

By WILLIAM W. BROOMHEAD.

Mr. W. Richardson's Orpingtons—The Candlesby Buffs—"Dead" Game—Bantam Doings—"Still They Come"—May Shows.

MR. W. RICHARDSON'S ORPINGTONS.

I hear that hatching results for this season at Northlands, Horsham, where Mr. W. Richardson has an extensive poultry-farm, are particularly good, and close upon 650 chickens are out and about. The first batch was hatched on January 6 and the second on the 15th of that month; and the youngsters range down to some almost a week old, with about five days' intervals between the ages. Most of them are Buff Orpingtons, but there are some Whites as well. The oldest of the chickens have been handled, and they are most promising; and of rare good size and bone for their age. Many of the Buffs show clear buff tails—a great point in the variety and by no means easy of achievement even in this advanced stage of the breed—while the birds also exhibit that nice, "soft" colour so much desired. The Whites, too, are coming ahead in a most satisfactory manner, the cockerels particularly being large, and showing clear, white and pink stubs with no indication whatever of sap. Last season Mr. Richardson sold his Whites with the exception of a few of the best, so he expects some excellent youngsters; while of the Buffs he mated only six or seven small pens of the choicest he had bred, and mated them carefully. If they do not produce some "extra-special" chickens this time he will lose faith in breeding. Altogether he considers he has a better "crop" of chickens of both varieties this year than he has had for the past ten years; so he should get a good selection for the shows, and should be able to spare a few for the summer and autumn events.

THE CANDLESBY BUFFS.

Another well-known fancier of Orpingtons, and particularly noted for the excellence of his Buff pullets, is Mr. Edward A. Cass, of Candlesby House, Burgh, Lincs. With home-bred pullets he is acknowledged to be "right at the top of the tree," and since 1908 at such important fixtures as Hayward's Heath, the Dairy, Palace, and Birmingham his birds have proved to be invincible. At the Sussex fixture his Buff pullets gained first, special, and second in 1908, and two cups (one for the best Orpington), and first, third, fourth, and fifth prizes in 1909 (his winner being claimed at £50 and his fourth prize bird at £25), while last year he judged the Buffs at that event. At Islington in 1908 his wins were first and third, and last year first, cup, special (best Buff), third, fourth, and fifth; Mr. Cass judged the variety at the Dairy in 1909. At Sydenham—in most fanciers' opinion the show of the year—he took cup, first, and third in 1908; cup, first, and second in 1909; and cup, medal, and first last year. The Candlesby House yard was not represented at Birmingham in 1908, but in the following year the pullets scored two cups (one for the best Buff Orpington), first, and third, while in 1910 the wins were first, third, and fourth. At the Combined Specialist Clubs' Show at Sheffield, and last year, he won second and fourth. The pullet which took first and cup for Miss Carey had originally belonged to Mr. Cass, and the third prize-

winner was also a bird he had bred. This is indeed a record of which to be proud, since every bird was hatched and reared on the place, and competition in the variety at the best shows of the season is always especially keen. This year, I see, Mr. Cass has been offering a limited number of eggs, so there should be some good classes at coming events.

"DEAD" GAME.

It is quite evident that "the noble art" of cock-fighting flourishes to-day on the Continent as much as ever it did in this country in "the good old days," when everyone who was anyone in sporting circles either had his own cock-pit or kept his own birds to challenge all comers. Quite recently I had an inquiry from Italy for pure-bred Aseel—"genuine, from North India"—Henny Old English Game, and Chamois Japanese Game. I was asked if I could guarantee "cock and hen, fighting dead game, without artificial spurs, by natural instinct," and to guarantee their progeny to do similar tricks! I was also asked if I had "Aseel Bantams, Japanese, imported from Japan in the United States of America, year 1900," and if I would guarantee their own and their progeny's "dead game" qualities. I made a few inquiries, but I must admit that I failed to find the whereabouts of such birds; hence if any reader of the ILLUSTRATED POULTRY RECORD can fill the order I shall be pleased to supply him with the name and address of my correspondent.

BANTAM DOINGS.

There is likely to be something of a boom in Bantams during the coming season. An exhibition, to be known as the Nottingham Bantam Show, will be held in the Corn Exchange, Nottingham, on Thursday, October 19, and as far as I am able to gather there is likely to be an extensive classification for the "wee yins." Major G. T. Williams will act as president, and Mrs. R. Fletcher Hearnshaw, of Fox Hill, Burton Joyce, as hon. secretary, with Mr. H. Inman officiating as judge. In Ireland, too, Bantam matters have not been allowed to lapse since the Irish Bantam Club has been in existence, and with Mr. Welby Adams as hon. secretary, great things are expected this year. I am glad to hear that the Bantam faction is going strong in the Emerald Isle, and secretaries of shows will do well to cater for it in a more generous manner than has hitherto been the case. The Irish Bantam Club has several valuable cups to offer, and they should prove a good draw. As an Irish correspondent points out, big entries in the Bantam section pay well, since less room is required for the accommodation of the birds, and they are more easily handled than large fowls.

"STILL THEY COME."

Yes, still they come! I refer to new varieties. The latest to be advertised in this country is the Rhode Island White. Wherein it will differ from the White Wyandotte or the White Plymouth Rock remains to be seen. I will keep my eyes open at the shows and report progress anon. As I pointed out in last month's ILLUSTRATED POULTRY RECORD in my review of the American Standard of Perfection, there are such new varieties as Columbian, Partridge, and Silver Pencilled Plymouth Rocks recognised by the American Poultry Association, and these are unquestionably easy of "manufacture"

from Wyandottes of that ilk. There is still room for clean-legged Brahmans and Cochins and feather-legged Minorcas and Leghorns. There is hope yet for the aspirant who has not given it a name. No wonder the utilitarian thinks fanciers are getting a bit "cranky"; there is cause for the complaint.

MAY SHOWS.

The first show to be held this month will be at Otley, Yorks, on the 5th. Then there will be the Somerset County Agricultural Show at Yeovil on the 17th, 18th, and 19th; clashing with Prescott on the 18th, and followed by Darwen on the 20th. The Devon County Agricultural Association will hold its annual event at Newton Abbot on the 23rd, 24th, and 25th, and I see that four classes are offered for chickens, birds hatched in 1911. Belfast is announced for the 24th, 25th, and 26th, and Batley for the 27th, while the Bath and West opens at Cardiff on the 31st and closes on Monday, June 5. The end of May is much too early for chickens of the year. It will be a good thing for the Fancy when chickens are not catered for at the early shows.

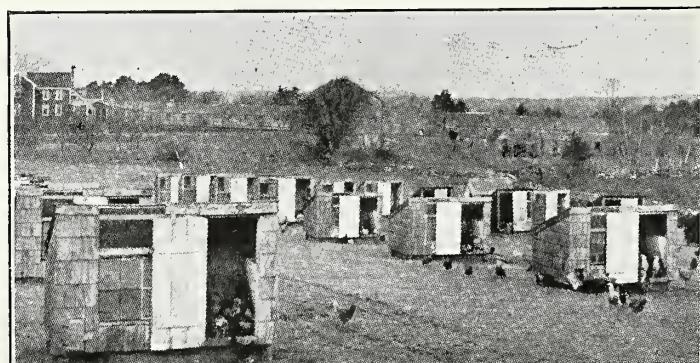
AGRICULTURAL COLLEGES AND POULTRY INSTRUCTION.

To the Editor of the ILLUSTRATED FOULTRY RECORD.

SIR,—My attention has been called to an article on "Agricultural Colleges and Poultry Instruction" in your March number, in which this college is erroneously included among institutions "... which are either entirely or semi-private, and consequently not eligible for support from public funds." You will allow me to point out that the Royal Agricultural College was reorganised in 1908, and received a grant from the Board of Education for the twelve months ending on September 30 of that year, a similar grant being made for the following year. Since then the college has been subsidised by the Board of Agriculture, and received its first grant from that Board for the year ending September 30, 1910. I may perhaps be permitted to add that as from the autumn of 1909 there has been a complete installation of poultry here in charge of a resident lecturer and demonstrator. Poultry management forms part of our regular course of instruction for diploma students, and is also included in a short course for colonial students, and a winter school for the sons of tenant farmers.

—Yours, &c., J. R. AINSWORTH DAVIS, Principal.

Royal Agricultural College, Cirencester.



AN EXTENSIVE COLONY PLANT. [Copyright.

SOME FANCY PROPERTIES OF PURE-BRED POULTRY.

POULTRY-KEEPING as a country-house hobby is finding favour in all parts of the country, and the ornamental possibilities of a flock of fowls running in a park or paddock are being realised by many people to whom the mere material advantage of poultry-keeping would not appeal with such force. A short time ago I was present at a show that was opened by the wife of a well-known public man (it was presumably her first visit to a poultry show), and it came to my knowledge that she was so fascinated by the White Wyandottes that she gave an order to a large breeder for ten pullets and a cockerel to run in her park. The beauty of these birds appealed to her, whose ideas regarding poultry had probably up to that time been based upon the degenerate mongrel type one sees running about the roadsides, which, whether they may be useful or not, are certainly not ornamental. Judging from this case, one might surmise that if the general public attended more shows and saw the beautiful varieties that are bred at the present day there would be more pure-bred fowls kept for ornamental purposes.

Ten or a dozen years ago one seldom saw flocks of poultry running about private parks and country-house grounds, for at that time the ornamental properties of the pure-bred fowl were scarcely realised. Flocks of mongrels or cross-breds were generally relegated to the farm premises. They were not nice to look at, and they lacked the classy character of the pure-breds, so that very few people would permit them to occupy a position where they might be seen. Now, however, the pure-bred hen is coming into her own, and with the development of rural industries her beauty is entitling her to be considered as part of the scheme for the beautifying of the estate. Not long ago I saw a pretty little country home standing in a miniature park in which were several ornamental white-painted poultry-houses, each tenanted by a flock of beautiful white fowls. Passers-by stopped to comment upon the charming effect, and I have no doubt many have formed plans for adopting some such scheme. White fowls are undoubtedly very beautiful when the setting of green park and trees is as charming as it was in this case, and there is no better variety than the White Wyandotte, whose plumage is relieved by the red face and yellow legs. There are, however, many other colours with which good effects can be created, and it is remarkable how well black fowls look when running upon grass. There is nothing sombre, for instance, about a flock of Black Leghorns, whose large red combs, white lobes, and yellow shanks provide such good contrasts, and for my part I should choose these before any of the black-plumaged fowls. A flock of Minorcas, however, is always striking, and both these and the Leghorns possess one great advantage over the whites in that, whilst the latter may become dirty in bad weather, nothing seems to alter the appearance of the black-plumaged birds.

Then there are many brighter-coloured breeds, prominent among which one may mention the Partridge Wyandotte and the Brown Leghorn. A rich-coloured cock of the former variety is one of the most handsome birds in the poultry-yard, and

though the hens, seen at a distance, are of a more sober colour, they are particularly handsome when running on grass. Brown Leghorns have an additional attraction in the form of a large red comb. Black-Red Old English Game may be included in the same class, but in each case the males are more ornamental than the hens.

One of the most pleasing effects I ever saw was produced by a flock of Silver-Pencilled Wyandotte cockerels, a variety that would, I am sure, be more popular for ornamental purposes if it were better known. A prominent breeder had a pen of these birds in the Irish Village at the White City, where they attracted much attention, and though once again the males are far more handsome than the hens, a flock of pullets running with one or two cocks would give a very pleasing effect. Nor can one ignore the claims of Silver-Laced Wyandottes and Barred Plymouth Rocks, two highly ornamental breeds which always look well when running on grass.

There has always been a large measure of popularity for buff breeds, and Buff Orpingtons in particular, and up till the last year or two there were probably more birds of this variety kept for ornamental purposes than any other. A rich coloured Buff Orpington, Buff Rock, or Buff Leghorn makes a fine picture, but a great drawback is the tendency to fade during the summer time, which considerably detracts from the beauty of the birds.

In a large park or field the best effects are produced by allowing the birds to run at liberty, the houses being placed as far apart as space will allow, and by this plan it is possible to keep two or three breeds without intermixing. In a smaller enclosure the number of birds must be limited if they are to run at liberty, or wired runs must be erected to confine them. One plan that I have seen in operation in a four-acre paddock is to have about half a dozen houses dotted about, to each of which is attached an ornamental fence of wire hurdles enclosing about 225 square yards of ground, and each flock is allowed to run at liberty in turn for the whole or part of a day.

It naturally follows that where fowls are kept primarily or partly for ornamental purposes the houses and fences must be in keeping, and though the actual formation of the house is not of such great importance, the painting makes a great difference. For both white and black fowls a white house is the most pleasing, and I remember once seeing a very good effect produced by a house painted white and picked out with black, the inmates, appropriately enough, being Silver Wyandottes. Bright-coloured houses are apt to jar somewhat upon the artistic sense, and, personally, I prefer to stick to white or a serviceable walnut brown for any breed.

Laying Competition in Ceylon.

The Leghorn controversy has penetrated to Ceylon, where both English and Australian Whites are to be found. In January last a six months' competition was commenced with a view to making comparison as to the productiveness (1) of English and Australian White Leghorns; (2) those of the low districts against the Leghorns of the hill country of the island; and (3) imported birds with the Ceylon-bred Leghorns. The results cannot fail to be of interest.

CARE OF MONTH-OLD CHICKENS.

By FRED W. PARTON.

THE most critical period in chickenhood is that from the time of hatching until they reach four weeks old. The care bestowed upon them during that period is of the utmost importance, and is a factor which may very largely determine the chickens' future value, either in the show-pen or from the utility standpoint. At the same time, the care and attention must not cease when the chickens are a month old, or the first month's work will have been in vain.

When they are hatched artificially, the heat in the brooder should be gradually lowered, so that by the

their general condition better. A mistake can, however, be very easily made either by over- or under-heating; but, as before stated, the temperature, when the chickens are a month old, should be 65 deg. (which, as a general rule, will be about right). Under favourable circumstances—by this I mean where space will allow of each batch being located sufficiently far apart to prevent the chickens mixing together and crowding into the same brooder at night—they may have absolute liberty and freedom to wander about and exercise their scratching propensities.

When they have been fed from the commencement on nothing but dry food, at four or five weeks old an addition to their dietary should be made, consisting of two feeds a day of soft food, which will



AN ADMIRABLE SPOT FOR REARING

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time the birds are four weeks old the temperature will not be above 65 deg. No hard-and-fast rule can, however, be laid down in this direction, since there are so many influences that have to be considered, such as the time of year, condition of the weather, position, and construction of the brooder. There are many authorities who declare loudly in favour of keeping the temperature as low as possible, the idea being that chickens so treated are brought up in such a hardy fashion that when the time arrives for them to face adverse conditions without the warmth and comfort of a brooder they are better equipped, by their early training, to bear greater severity in the weather. With this, however, I do not altogether agree, since I contend that chickens thrive best, and ultimately make better stock, by being reared in a sufficiently-heated atmosphere. Their growth is much more pronounced and

considerably assist in the formation of feathers. This is a very important matter, and must not be neglected, since at this age their "fluff" or baby-feathers are disappearing, and plenty of nitrogenous food is needed for laying the foundation of their adult plumage. This considerably drains the system, and unless food be of the right kind a serious check to their growth is inevitable. The food, therefore, must not only be ample, but of the quality to both keep the body and feathers growing. Their digestive organs have been well exercised and strengthened by the seeds upon which they have hitherto existed, and the soft food will come as a very valuable variation and be easily assimilated, thereby giving a rest to those organs. Most of the chicken-meals so largely advertised are practically similar in nature, and are excellent, containing, as they do, most of the elements required for assisting

the growth and maintaining the health; so are coarse oatmeal made with boiled milk into a very stiff porridge, ground oats, and fine barley-meal, from which all the larger particles of husk have been sifted. Middlings are too coarse and fibrous for chickens at this age, and may cause diarrhoea. There is one matter, however, which must not be overlooked. Whatever kind of soft food is given it must never be too moist, nor yet must it be allowed to remain within easy reach of the chickens for any length of time. Make the food into as stiff a paste as possible, give very little, and at regular and frequent periods. This is advice of a very elementary nature to the majority of poultry-keepers, and on that account like most of the simple, everyday matters, frequently overlooked.

Green food, as hitherto, must be generously supplied, young grasses and other tender shoots are invaluable. As a rule chickens that are at liberty can get all they require at this time of year.

Worms and insects of various kinds can also be obtained naturally, which gives such help to the constitution. When the chickens are placed in such a position that these things have to be "hand-fed," small portions of butchers' offal or table-scrap will prove excellent substitutes.

Whether chickens are naturally or artificially reared it is absolutely necessary that the brooders and coops should be regularly moved from place to place, thus minimising the danger of disease arising from impure soil, which is such a fruitful source of trouble. Cleanliness is of the greatest importance, and unless care is taken in this direction all else will be in vain. This applies equally to the management of coops, brooders, and chicken-houses. The first should be made with a movable wooden floor, and requires daily attention as to scraping for the removal of all excrement.

Brooders are rather more difficult to keep thoroughly clean, as the sleeping compartment is so small, and is shut in to such an extent that to get into all the four corners is not easy of accomplishment, especially for those whose time is limited. It must, however, be done, as chickens will not thrive in dirty, insanitary surroundings. How often one notices fine, healthy-looking chickens beginning to droop as the vigilance of the owner slackens. The chickens' feet and toe-nails get caked with mud, which, unless removed, becomes as hard as stone. This will stop the free circulation of the blood, the legs grow cold, and trouble very soon follows. This is directly caused by inattention to cleanliness, and there is no excuse for attempting to rear chickens under such unsavoury conditions. If time will not allow or inclination suggest what is needed to be done, it would be much better to give up the work entirely.

Probably of more importance than almost anything else is the question of ventilation and the proper amount of space to be allowed in the sleeping quarters. This, however, is not an easy problem to settle, since the forms of sleeping accommodation for chickens are so varied in their description. So far as brooders are concerned, as soon as possible after the chickens are a month old they should be removed to more roomy quarters. Despite all that may be said to the contrary, the present type of brooder is distinctly too small for chickens after this age, and, furthermore, is quite incapable of giving adequate room for more than one-fourth the

number it is assumed to accommodate. A well-made, draught-proof chicken-house, with a storm-lantern placed inside to give a little heat, or a permanent building adjoining a cow-byre, from which a certain amount of heat is secured, is excellent for the purpose. Chickens that are reared in a coop, when it is not too early in the year, or when the weather conditions are not exceptionally bad, require no further accommodation until they are old enough to be removed to an ordinary poultry-house. When, however, the chickens are hatched very early, the hen will desert them, while the weather is still too severe for them to remain in the coops alone. They may be placed in chicken-houses similar to those mentioned for artificially-reared chickens when they are removed from the brooder. Overcrowding must, at any cost, be avoided. What may be ample space for them to-day is quite insufficient ten days hence. Young birds must have their space systematically increased commensurate with their growth. Rigid culling should be carried on right from the time that their appearance, shape, colour, and other characters are sufficiently pronounced to indicate into what they will develop. The doing of this will serve a dual purpose in that it combats the tendency to overcrowd, and at the same time gets rid of the wasters, so that the land is occupied by more perfect types of the respective breeds.

The advantage of a portable chicken-house is that the inmates enjoy more change than when the house is permanently fixed. There is no doubt that one of the greatest factors to be regarded in the rearing of chickens is a change of environment. This is apparent in many directions, as all who have tried the matter can testify; it increases their activity and encourages growth, and this tends to their general well-being.

REARING TURKEYS.

By C. F. FALKNER.

TURKEYS are to me the most interesting of our domestic varieties of poultry. What is grander in spring than the strut of the turkey cock as he escorts his hens around the stack-yard or paddock? What more quaint and interesting than the brood of youngsters as they stroll along a hedgerow catching flies or searching for grasshoppers in the long meadow grass, constantly uttering their peculiar cry? In autumn we have the flocks of well-grown youngsters wandering in their own majestic style over the stubble fields, gleaning corn and picking up a few stray insects. This is truly a magnificent sight, especially if the number of the flock runs into three figures; and, finally, we come to winter and Christmas, the last, doubtless, the most familiar, and, to some, the grandest stage of all, judging from a line in an old verse, "For a turkey braised, may the Lord be praised." At any rate, it is an undoubted fact that the turkey, dead or alive, is the king of the poultry world, whether he is gracing the farmyard, the poulters' shop, the show-bench, or the dinner-table.

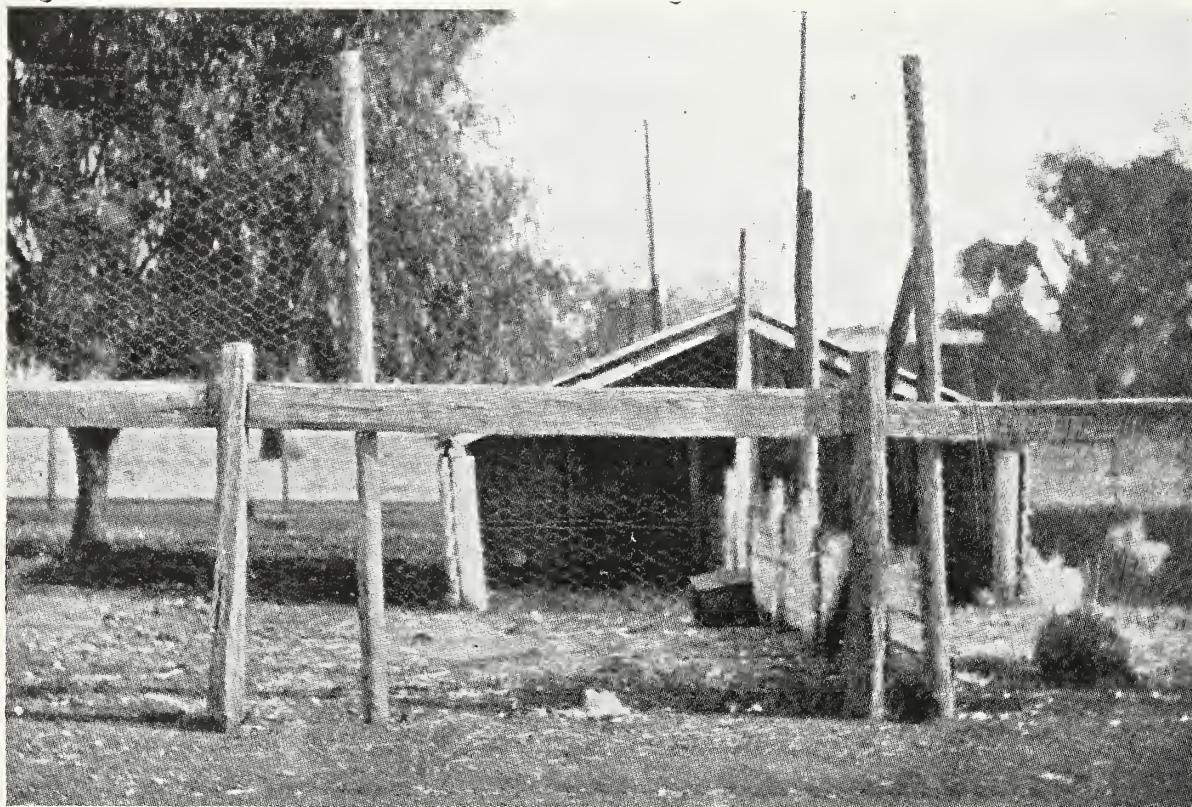
I will not describe the numerous varieties of turkeys or their specific merits. Suffice it to say that the most widely known are the American (or Mammoth Bronze), the Cambridge Bronze, the Norfolk Black, and the Austrian (or White) Turkey, of which

the most popular is undoubtedly the Mammoth Bronze, on account of its size and hardiness. But whichever variety is selected, the object in view is invariably the same, and that is to obtain a well-developed, thick-breasted bird. And now, how is this to be obtained?

The stock birds should be settled in their quarters early in the New Year, great care being taken in their selection. First as to age. A turkey in its wild state does not mature till it is two years old, and a gobble will retain his supremacy in a flock for four or five years. I prefer, all things considered, two-year-old hens and a cock a year or two older, and, for size, to obtain this in the hens if possible; the larger the better, anything from 18lb. to 24lb., but bearing in mind that the heavier the hen the less eggs she is likely to lay, especially if the extra pounds are attributable to fat. The cock should weigh about 30lb. to 35lb. if in fair

leaves and straw, a thatched hurdle or two placed in odd corners, or a few boughs placed against a wall all make excellent places for her to creep under and lay her eggs, which number from about 13 to 35 each batch. It is always advisable to collect the eggs as laid, and to hatch the first batch under ordinary hens, breaking the turkey hen of her broodiness as soon as noticed, when she will recommence laying in from ten days to a fortnight. Collect these eggs as previously, but the turkey hen may be allowed to hatch them herself, and, as the chicks will not appear much before June, her motherly care will be of great assistance to her brood in chilly autumn.

An ordinary hen will not cover more than nine turkey eggs, so it is advisable to put three hens down at once, and then at hatching time you should have two good broods. A turkey hen will cover from 15 to 25 eggs. A quiet place, not too light,



AN EXCELLENT ARRANGEMENT FOR THE REARING OF TURKEYS

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condition. I carefully avoid a bird of either sex that does not carry plenty of breast, and one that has a prominent nob on the point of breastbone. Of course, freedom from any trace of disease or deformity is absolutely essential. One cock can be mated with eight to ten hens. Having selected your stock birds, get them settled in their permanent quarters as soon as possible. A large, roomy, but not draughty, open-fronted shed is a good roosting-place, although an ideal position is a tree selected by the birds themselves in a park. But few breeders are able to allow this owing to risk of losing them by thieves, either two- or four-legged.

Eggs may be expected early in March, and as the hen is a particularly shy and timid bird, she will wander a long way to find a suitable nesting-place. Convenient places should be made up for her near at home to select from. An old barrel lined with

should be selected for the hens to sit in. Great care must be taken that the nests are carefully made and kept clean and free from vermin, that the hens have plenty of room, and that they, too, are kept free from vermin. The period of incubation is twenty-eight days. During hatching time the hen should be disturbed as little as possible, for fear of her trampling on the chicks, which are exceedingly weak and feeble when first hatched. Remove the empty shells and allow the hen to come off and feed only if restless. It is best to try and arrange to give her a good feed before the first chick is hatched. Turkey chicks hatch very rapidly and cleanly if the eggs are fresh, a whole hatch coming off in five or six hours. The newly-hatched chicks should be left in the nest thirty-six hours, after which time they should be quite strong. Remove hen and chicks to a large, dry, well-ventilated coop

with wire-covered run in front and board floor covered with dry chaff or peat moss if early in the season. The coop and run should be placed in a sheltered corner, where plenty of good grass and herbage are obtainable.

The chicks' first food should consist of hard-boiled egg chopped fine and dried off with ground oats or crammings. This food may be given for the first four or five days, varying it with an occasional feed of biscuit-meal and a last feed at night of a reliable dry chick food. After the first few days the egg may be replaced by fine pollard, scalded and dried off with ground oats, or boiled rice dried off with crammings, these foods to be continued for the first three weeks. The chicks must be fed regularly and sparingly every two hours, and although it may not be apparent just now, overfeeding, mind, is fatal, and special attention must also be paid to the regular supply of water, flint grit, and oyster shell. After three weeks the interval between the feeds may be increased to three hours; green food in the form of chopped onions or dandelions may be added to the soft food, which may be mixed with skimmed or new milk. Cracked wheat or groats may replace the dry chick food. Vary the foods as much as possible, but do not make any sudden changes. Move the coop and run on to fresh ground daily, and when space and weather will permit allow the hen to roam about with her chicks after the first week. The hen and chicks should be periodically examined to see that they are all quite free from vermin, which are the cause of many fatalities.

This system of feeding should be continued till the chicks have "shot the red," which they do when from eight to ten weeks old. About this time the hen will be thinking of leaving her rapidly growing chicks, so they should all be moved to a nice dry, well-ventilated, but warm house about 8ft. by 6ft. and 6ft. high at ridge, and mounted on wheels. No perches should be allowed, the floor should be covered with clean dry wheat straw, and here the chicks should be warm enough when the hen forsakes them. They will now only require four feeds a day. Do not drop off the onions, which give tone to the system. Their evening food may now be whole wheat or good heavy white oats, and as soon as a field of corn is cut and carted, the turkeys should be moved on to the stubbles without delay, and the house moved daily, when they will only require two and probably one feed a day, and their growth will be amazing. Keep them on the stubbles as long as there is any corn for them to pick up, or until the ground gets wet and cold; they must then be moved to their winter quarters, and nothing beats a good barn.

rears them, and this is a true saying which has been borne out by many poultry-keepers.

NATURAL REARING.

About the eighteenth day—that is, three days before the hen is due to hatch—she should be dusted lightly with insect powder, as nothing retards the growth of the youngsters more than the lice which they are liable to get from off the body of the hen. The hen should be fed before being put out in the coop with her brood, otherwise when the chicks have their first feed she will in all probability devour it. If the weather is damp or cold a floor should be fitted to the bottom of the coop and well covered with very fine peat moss litter. It is wisest to cover up the front every evening, as this will not only protect the chickens from cold winds and rain, but act as a safeguard against prowling vermin. Place the coop in a sunny position in winter and in a nice shady spot in summer. The old hen should always have free access to the drinking fountain, which should be just in front of the coop; in the



SOME CHICKEN REARING NOTES.

By ALFRED A. FLEMING.

FOR the breeder who intends hatching in large quantities there is little doubt that the artificial method of rearing is the better, as broody hens are very scarce in the winter time. For those who wish to hatch a small number later on in the season hens are preferable. The feeding and general management in both cases is practically the same. Many old hands declare that anyone can hatch chickens, but it is a wise poultryman who

REARING IN THE NATURAL WAY.

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summer time the fountain should be refilled once or twice a day, as sun-warmed water is most injurious. Move the coop daily, since nothing benefits the youngsters more than fresh grass. When they are about eight weeks old the hen is unable

to brood them properly, and this in the winter time is the age when they should be removed to a small cold brooder.

For the first twenty-four hours of their lives it is quite unnecessary to give chickens any food at all, as preparatory to hatching they absorb the yolk of the egg, which sustains them for one or even two days of their existence. With their first feed should be mixed a little fine grit. There are two methods of feeding—namely, the dry and the wet—and both ways have strong advocates in many of our leading poultrymen. My own experience is that the best way is the happy medium or combination of dry and wet food. A few years ago for the first few feeds practically nothing else was used but hard-boiled eggs and bread-crumbs, and there are still to-day a great many who prefer this method, although I am sure that if a referendum were taken on this question we should find that the majority were in favour of the dry food. Whilst on the subject of dry feed I should like to strongly impress upon all novices the great importance of purchasing their food from a reliable firm who understand the blending of the different seeds and know what should be put in and what should be left out; cheapness in nine cases out of ten is the dearest in the long run. Chickens when first hatched require feeding about every two hours for the first fortnight; at six weeks old five times a day is sufficient, twelve weeks four, and gradually diminishing to three.

At three weeks or a month old a little soft food may be given, and there are many excellent meals on the market. If preferred, ground oats, pinhead oatmeal, thirds, biscuit meal, mixed together and fed in a crumbly state answers the purpose just as well. A little pure meat meal may be added as the chicks get better, or, better still, if one has a good bone-cutter, give them Nature's own food—green-cut bone, which they will quickly devour. Green-cut bone should only be given two or three times a week, and should be stopped when the birds approach maturity unless it is desired to bring them on to lay. The mid-day feed and the last one at night should consist of dry chick feed. At five weeks old the small feed hitherto used should give place to a mixture which consists of much larger seeds. A little charcoal and salt occasionally added to the soft food will be found very beneficial. Half-boiled rice and chalk are most useful for stopping diarrhoea. Lettuce, dandelions, nettles, &c., are all good and should be finely chopped up. Never overlook the importance of grit. Clean fresh water is most essential or if skimmed milk can be spared so much the better.

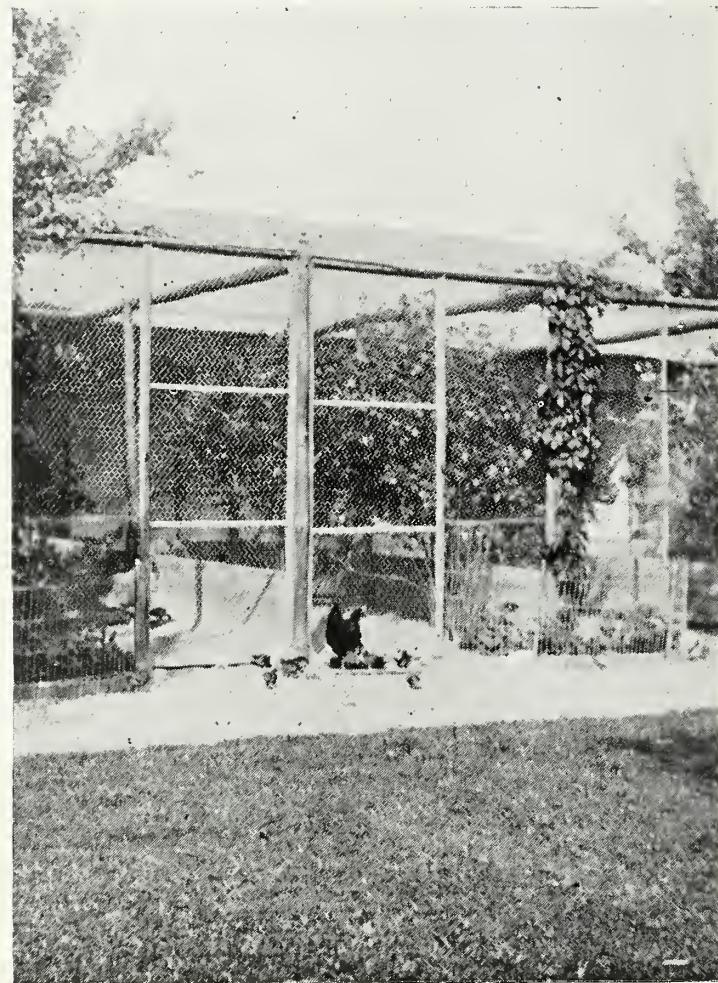
All foods should be fed in troughs which the chicks cannot get into, and any food which remains should be removed after they have had sufficient, otherwise it becomes stale, and in the case of soft food especially rapidly causes diarrhoea and bowel trouble. In order not to run the risk of crooked breast-bones it is advisable to take away all perches from the cold brooder or house to which the chickens have been removed.

POULTRY IN THE GARDEN.

THE average gardener probably fails to appreciate the connection between fowls and the garden, and there are excellent reasons why

horticultural enthusiasts regard the hen creation as natural enemies. But because a scratching hen can probably do as much damage on a flower border as anything on earth, short of a tornado, that is no reason why she should not be regarded as a valuable ally in other directions. Indeed, I venture to predict that in the near future poultry-keeping and gardening will be much closer connected, for the plan which I am about to describe, though especially suitable for amateurs, can be adopted upon a much larger scale.

It is about seven years since I first saw the plan in operation, and it was on some allotment gardens close to a manufacturing village in the Midlands.



A PICTURESQUE, THOUGH AN EXTRAVAGANT, GARDEN POULTRY RUN. [Copyright.]

The occupier was primarily a horticulturist and a very successful grower of exhibition vegetables, but latterly he had become a poultry-keeper also, and he assured me that the plan he had adopted of dividing his land into plots, and running poultry upon one whilst the others were under crop, was good for the fowls, good for his ground, and good for his pocket.

To the best of my recollection that man had three plots of ground, each surrounded by wire netting, and of equal extent. One plot, containing the fowls, looked as though it had only recently been turned over, and I understood that a crop of early potatoes and peas had only just been lifted from it. The plot that had recently been vacated by the fowls was being trenched for celery or planted with broccoli and winter greens, whilst the remaining plot was

bearing a fine crop of peas, beans, onions, carrots, &c. As each plot in turn became vacant for the fowls the roosting-house was carried from one to another, the lately vacated run being dug over to a good depth.

Since that time I have seen the plan described in a more elaborate manner. In this case the ground was divided into four enclosures, and a permanent house was placed in the centre with a trap-door leading into each plot, so that the fowls could be turned into any one of them by the simple expedient of opening a particular trap-door. In this case also a suitable list of crops for succession was given, and I do not doubt that the four-plot scheme would work out better than the three, although the ground would not get so much manuring.

There are several reasons why this plan is so very suitable for the small poultry-keeper, and one is that it overcomes the great objection to keeping fowls for any length of time on a small plot of ground. Now, the small grass run is a delusion and a snare. One cannot preserve grass in good order in a small run where a number of fowls are constantly kept, and it is a great mistake to suppose that the soured stuff which does grow is beneficial to the birds that are hardy enough to eat it. For many months in the year a small grass run is little better than a pestilential mud-bank, and I never lose an opportunity of recommending that such places be dug up, since, by doing so, we bury the offensive matter and provide a new surface. But by going further and combining gardening with our poultry-keeping operations, we profit by the richness of the ground, due to the presence of the fowls, whilst the heavy cropping cleanses and freshens the ground as no other process can, so that three or four times a year, as the case may be, we change our fowls on to a perfectly fresh piece of ground, with its wealth of insect and animal life.

I have heard people object that it must be bad for fowls to run about on bare soil, especially in wet weather, but I venture to assert that such a surface is infinitely preferable to a filthy apology for a grass run. It depends entirely upon the nature of the soil what the conditions are in wet weather, but, thanks to the domestic hen's talent for scratching, it must be very heavy stuff if she cannot turn it over in the search for dainties, no matter what the weather may be. In any case, this need not be considered for one moment as an objection. Provided the birds are well supplied with green food (it is better to hang it up on the wire netting instead of throwing it upon the ground) they will be far better off in a cultivated small run than in one with a turfed surface.

There can be no doubt that this plan of keeping fowls on arable land offers special advantages to small holders, and what is now being done by amateurs will at some future time be carried out on a much larger scale. To all who cultivate gardens and who desire to keep a few fowls I can recommend it in preference to fitting up a permanent poultry run. The only additional cost is for the fencing. It need not be feared that valuable garden ground has to be given up for poultry when it might be utilised to better advantage. The practical gardener sows and plants for succession, and as he lifts one crop he prepares the ground for another. How could he prepare the ground better than by running fowls upon it and distributing a layer of rich manure?

THE MODERN CRAZE FOR SIZE.

[*We print below some further criticisms on this important subject. Other comments appeared in the March and April issues.—Ed. I. P. R.*]

By MISS GALBRAITH.

WHILE I cannot speak for the opinions of academic and exhibition experts, I do know those of a large number of the leading utility poultry-farmers, men who have succeeded by reason of the quality of their stock and the value of their market produce, and I have never heard one dissentient voice amongst them on the points raised by Mr. Palmer in his article. Were I asked for a text for utility walls I should quote his words, written elsewhere, "Anything over 5lb. is an economic blunder."

The utility man, receiving no fancy prices, has to look very closely to the relative value of money expended and the ultimate price received for his produce; he must, and usually does, calculate on the basis of profit over cost of production rather than total output. Thus many of the most successful large dairy-farmers in England keep Ayrshire cows because, while they usually yield less than Shorthorns in quantity, and less than the Channel Islanders in butter-fat, yet in proportion to food consumed, and other expenses, they leave a larger profit than any other breed. In the production of meat, whether cattle, sheep, pigs, or poultry, the breeds that return most profit for food consumed are those with small bones and fine-grained, high-quality flesh. This is especially true of poultry, for while the Indian Game-Dorking cross produces huge carcases at enormous expense, the Scotch Grey of medium size produces the largest breast slice of finest quality, and leaves a greater profit over food consumed than any breed in the country. There is no pure-breed, or, so far as I know, no cross-breed either, to compare with it on this last point, and I have tried many.

In the matter of prolificacy it is notable that medium-sized to small breeds carry off the palm when they are specially bred for that purpose; moreover, the breeding of large animals, particularly poultry, with that end in view reduces the average size; or one might put it the other way, breeding for size reduces prolificacy in time. As an example, the White and Silver Wyandottes of famous laying strains may be taken, for while the male birds are still large, I have never seen a large pullet of either breed belonging to a heavy laying strain that has a reputation extending over many years. I have handled birds of every well-known strain in England, and know no exceptions. Compared with the exhibition strains, and still more noticeably when compared with actual prize-winners, the laying strains of Wyandottes are small birds.

Those who object to the acknowledgment of this undoubted fact will at least admit that you cannot get size save at the cost of—food. The increased size repays the exhibition breeder. What has the utility man in return for the extra food consumed by the larger breeds, or by the largest individuals in any breed? Absolutely nothing; anything over 5lb. is dead loss; it represents food eaten to be stored

up on the body instead of being transformed into extra eggs. Further, the heavy birds are "used up" as layers long before the medium to small specimens.

On the vexed question of size of eggs there are more points to consider than are dreamt of by the uninitiated. I have never known, and never heard of, a whole strain laying small eggs permanently. It is a question of individual and family peculiarity. There are some birds who begin with a very small egg and in the course of a couple of months rise to good-sized, and there are some who begin and continue as they have begun—laying under-sized eggs all their lives. The former are to be encouraged, and it is to them that Mr. Palmer refers. The latter should be penalised, and they are the individuals of Mr. Brown's acquaintance evidently. It would suggest that all birds failing to lay 2oz. eggs by the fourth month of the Competitions should be struck off the prize lists. It will usually be found that where one pullet in a pen lays small eggs she is from a different mother from the others. But, and here is our puzzle, it by no means follows that the mother laid small eggs. For like does not always produce like in this matter, or breeding heavy layers of large eggs would be a much simpler matter than it is. Sometimes it is only the individual, but occasionally it is hereditary, that is, directly traceable to certain birds. I know twelve pullets, not one of which lays a 2oz. egg, yet the two mothers, of different breeds, from whom they sprang laid eggs unvarying from $2\frac{1}{4}$ oz. to $2\frac{1}{2}$ oz. Similarly, I have seen good-sized eggs from the progeny of a small egg layer, though this is rarer.

The real difficulty with the progeny of heavy laying strains, however, lies in a quite different direction. It is that the tendency to early and ever earlier laying is so marked that when they come into the hands of the general farmer and cottager, who understand nothing of this, the chances are that the birds will commence too young, and the result is, as Mr. Brown describes it, disastrous—a general reduction in the size of the available eggs from a whole district. I have known this to happen while the home-birds, understood by their breeder and frequently moved, continued to produce large-sized eggs from November onwards. I know one family that cannot be given to cottagers or back-yarders to rear on this account. And it seems that until we can educate the prospective buyers and rearers into greater skill in feeding, rearing, moving, and generally understanding the birds, the only safe course is to refuse to sell anything but mature pullets if we would escape criticisms such as that of Mr. Brown, which is no doubt founded on observed facts. The mistake that the critics make is in blaming the heavy laying strains, instead of the lack of understanding on the part of their rearers, usually eager to get a return at the earliest moment possible. There is one more point often overlooked by those who condemn the small egg, and that is its suitability for invalids and children. I have heard the keeper of a fashionable boarding-house complain that she had the greatest difficulty in procuring eggs small enough for her lady guests. Mothers have frequently told me that they would rather have seven or eight small eggs than five or six big ones, and personally I am forced to keep a few very late hatched birds in order to have eggs small enough to meet the re-

quirements of my City friends, with their rather bilious digestions. Until eggs are sold by weight this size difficulty will probably never be satisfactorily settled, as greed demands as much as possible for its money; but the indubitable fact remains that the layers of very large eggs leave a smaller profit over food consumed than do the more prolific producers of moderate-sized, and possibly even of small, eggs.

It is difficult to believe that Mr. Elkington has read Mr. Palmer's arguments carefully, or quoted them correctly to the salesman he mentions. If there be a retailer who *cannot* sell 2oz. eggs at all times, and a proportion of $1\frac{3}{4}$ oz. weight in early winter, then his services and his opinion are alike worthless to the ordinary producer. The retailer in fashionable circles would like to force us to give him $2\frac{1}{2}$ oz. eggs at the same price as those of 2oz. Until he is prepared to pay according to the cost of production he will not get the larger eggs from wide-awake English producers. As to the London market, does not Mr. Elkington know that the standard for this, "the first market in the world," is 2oz.? Just the weight produced after early winter or autumn, by the very pullets Mr. Palmer advocates. While it is an open secret that the notorious shortage in London between October and Christmas is chiefly due to the fact that most producers find it more profitable to sell eggs locally at that season, whatever their size, rather than in London—so much for the best market in the world!

Mr. W. W. Broomhead differentiates between size and weight, the simple utilitarian does not. For obviously a big bird "fluffed out" will look bigger than a small bird "fluffed out," and will win over it. And it is in the effort to get the large body that the over-feeding and weight he deplores takes place.

I should like to suggest that the usefulness of this controversy would be greatly enhanced to the amateur and general poultry public if a list were appended containing all the names of those taking part in it, under the headings of the sections to which they belong, thus: organising distributor, fanciers, utility producers. The public could then better judge of the reasons for differences of views.

By J. E. LEIGH.

IN response to the invitation extended to your readers for an expression of their views upon Mr. Geo. A. Palmer's most interesting article, I should like to mention a few facts which have confirmed an opinion, previously formed, regarding the relation of the size of the hen to her productiveness.

Some years ago, noticing I had a few very fair layers amongst my Light Sussex—a breed possessing in the highest degree all the essentials of a good table-bird, including size and length of body—I decided to try what could be done in the way of developing their laying qualities. As the result of selection by trap-nesting and observation, I have built up what may fairly be regarded as a good laying strain, *but* in attaining my object I have lost considerably in size and also in shape—in fact, so pronounced is the change that in order to supply a first-class table specimen I have to keep a distinct strain of the breed.

Then, again, last year the management of the

Utility Poultry Club's Laying Competition provided me with exceptional opportunities for observing and studying the varying types and characteristics of the different strains of the several competing breeds, and the question of size was so forcibly impressed upon me that in my report upon the Competition I wrote as follows: "It was so noticeable as to be worthy of special mention that almost without exception the best layers were to be found amongst the *smaller* specimens of the several breeds." I might have gone further, and added that the worst layers were amongst the larger birds. I am firmly of opinion, and speaking generally, that size (by that I mean anything beyond the normal size of a particular breed) and great productiveness are not to be found in the same bird.

On the question of size of egg, the Competition again provides me with many useful object-lessons, and in the weighing and recording of every egg laid by individual birds their several characteristics became observable, and it was clearly demonstrated that pullets starting with abnormally large eggs—*i.e.*, over 2oz.—were very indifferent layers. On the other hand, those commencing with eggs under 1 $\frac{3}{4}$ oz. seldom reached the standard of 2oz. Those two extremes must therefore be carefully avoided, and, as Mr. Palmer quotes, "In the middle course safety lies," and our efforts should be directed towards breeding and developing strains producing the maximum number of eggs of a size easily marketable at all times of the year, for in that direction lies the greatest profit to the poultry-keeper.

After all, who is really responsible for this cry for the "big" egg? I am inclined to the view that it emanates to a great extent from the wholesale merchants and dealers, to be used by them as a means for depreciating the price of the goods offered them, and which they are desirous of buying, rather than from the consumer, who, in my experience, is satisfied with, and really prefers, the well-proportioned egg that fits the cup to the top-heavy and unappetising appearance of the "big" egg of abnormal proportions.

By GEO. A. PALMER.

I DID not intend contributing to the discussion until next month, but I must object to Mr. Elkington's criticisms, as he attributes statements to me which I never made. Referring to the size of eggs, he says: "If we are to accept Mr. Palmer's arguments, this is of no consequence whatever." Again, "An egg is an egg, and as long as we get plenty there is little to grumble about." Again, "Buyers don't mind the size, if they know that they can depend upon getting home produce." Again, "Small hens laying *small* eggs are the most profitable."

Mr. Elkington had my article before him. I know that I said nothing of the kind. Let him quote a line from my article to show it.

What I said was: "5lb hens lay just as large eggs and as full of yolk as 9lb hens"; "Pullets which start at this size (1 $\frac{3}{4}$ oz.) will be easily laying 2oz. eggs by April"; "1 $\frac{3}{4}$ oz. eggs are readily saleable at this time of the year" (mid-winter). I spoke of eggs of which in thirty breeds eight weighed 16oz. to 19oz. from hens and pullets mixed. In no place did I advocate small eggs. My exact words were "extremely averse to striving for extravagantly large eggs."

FOWL CHOLERA.

FROM time to time epidemics among poultry have broken out which have swept whole areas like a plague. To the disease is given the name of Fowl Cholera. So serious was the resultant loss in France a generation ago that the late Professor Pasteur devoted a considerable amount of attention to it. He recommended inoculation as a preventive, but that is hardly practical for fowls of comparatively small value. Since that time epidemics have taken place in England, Ireland, Italy, and, more recently, in America, in all of which the devastation was enormous. A bulletin just issued by the Rhode Island Agricultural Experiment Station states that :

One of the severest epidemics occurred in a poultry plant in Massachusetts, not far from the Rhode Island line. In this instance the epidemic . . . involved the entire destruction of more than four thousand birds, not to mention the loss in trade.

The publication of this bulletin by Dr. Hadley is welcome, due to the increasing prevalence of fowl cholera in America.

Upon the general question, together with interesting observations as to how the epidemic developed and the effect of isolation of flocks, the report in question deserves careful study, as it is too long to quote in full. The following will enable poultry-keepers to fix the disease should it unfortunately make its appearance.

I. How to Recognise the Presence of Fowl Cholera in the Flock.—The poultryman must not be deceived into believing that the first disease which causes a high mortality in his flock is necessarily fowl cholera. Unfortunately many poultrymen have a tendency to use the term in a very loose sense, and place under this head almost any ailment that is accompanied by diarrhoea, and causes the bird to sit in a corner with ruffled feathers. The real cholera of fowls usually manifests certain specific, clinical features and pathological appearances, which the observing poultryman will have little difficulty in recognising. In order of their importance these clinical features are as follows:

1. Sudden Death.—The early deaths are likely to be of this character. Sick birds are seldom seen, but they are found under the roosts dead in the morning. Later in the course of the epidemic the duration of illness is greater.

2. Yellow or Green Excreta.—This is a very characteristic symptom. The excreta of normal fowls is not yellow; and when it is green, it is dark green, approaching black. In cholera both the yellow and the green are bright; the green is often an emerald green. These different colours may occur either alone or separately; and both are usually accompanied by diarrhoea and the extrusion of thick mucus. In case it is known that cholera is in the neighbourhood, it is well for a poultryman to examine, from day to day, the character of the droppings on the dropping-board.

3. High Temperature.—The temperature of the normal fowl is between 106 deg. F. and 107 deg. F., higher at evening and lower in the morning, although fowls show many individual irregularities, some having a higher, some a lower, temperature.

Within a few days after infection the temperature rises to a point between 109 deg. F. and 112 deg. F., sometimes slightly higher. From this point it falls

gradually until death or recovery takes place. The poultryman can easily take the temperature of sick birds by means of a veterinary clinical thermometer. The bird is held by one hand, while the bulb of the thermometer is thrust into the rectum. Most thermometers will register in from one to two minutes.

When a bird has finally died, a poultryman who wishes to satisfy himself further regarding the possible presence of fowl cholera may make a post-mortem examination. The bird is placed, back down, and with the head toward the operator, upon a board or table; the legs may be forced down at the sides to give greater equilibrium. Next the point of a sharp pair of shears is forced through the skin and under the "collar-bone" at a point on the left side (in relation to the operator) just in front of, and to one side of, the anterior end of the breast-bone. The "collar-bone" is cut through, and the incision is extended, cutting through the ribs and in a line parallel, and to the left, of the breast-bone, clear to the cloaca. Next, in order to more easily push the sides apart and reveal the internal organs, cuts are made through the skin to the right, in front of the breast-bone, and also to the left, half-way down the side of the bird in the direction of the back-bone. Now the sides may be bent over, breaking the ribs if necessary, and the internal organs exposed. In case of cholera the following pathological conditions are to be observed, given in order of importance.

1. **The Liver.**—This organ is enlarged and very full of blood. The surface may be uniformly greyish or it may be thickly dotted with minute red points, which are in reality small hemorrhages. When cut into with a knife the texture of the liver is not firm as in the normal condition, but soft and granular.

2. **The Spleen.**—The normal spleen is about the size of a small shagbark walnut, rich red in colour and firm in texture. In cholera the size is as large as, or larger than, a large walnut; the colour is very dark red (sometimes greenish), and the consistency soft and granular like that of the liver.

3. **The Intestines.**—The intestines in many cases are distinctly reddened on the outer surface, and the blood vessels are distended. The walls of the intestine are thick and heavy. On the inside of the intestines there is little food material but much mucus which is frequently stained red or reddish-brown from blood coming from intestinal hemorrhages.

4. **The Heart.**—The normal heart is in colour a pale and homogeneous pink, in which the blood vessels of the organ itself are scarcely to be observed. In cholera the surface is irregularly suffused with red, there are small punctiform hemorrhages, and the blood vessels are large and distended.

5. **The Lungs.**—In cholera the lungs are not always affected. When they are, however, they are heavy and dark red, often filled with blood or with serum. In extreme cases, however, the lung tissue is fibrinous and hard, yellowish in colour, and more resembling normal liver tissue than lung tissue in texture. One must not be deceived by the diseased conditions observable in the lungs of birds that have been dead several days.

II. What to Do at the Beginning of an Epidemic of Fowl Cholera.—After a poultryman has decided that the disease which has entered his flock is actually fowl cholera, it is advisable to undertake, without delay of an hour, immediate steps to check the progress of the epidemic; and these measures depend first upon the manner in which the poultry

are kept—whether in a single house, in colony houses with unrestricted range, or in miscellaneous sheds, lofts, boxes, &c. Again there is a difference in procedure depending upon whether the poultry are yarded in groups or run together. It may be said at the beginning that, when the disease appears among fowls which are allowed to run together in large numbers, the outlook for checking the epidemic is not favourable.

The recommendations made when the disease appears are to (1) bury the dead birds very deep or burn after soaking the carcasses in oil; (2) remove and kill all birds in any infected house and run; and (3) spray the houses and runs with some good disinfectant so as to kill the disease-producing bacteria in the excreta, which should be repeated several times.

In order to prevent the spread of the cholera to birds not affected inoculation with a 5 per cent. solution of carbolic acid is suggested. This is to be accomplished by use of a hypodermic syringe, forcing the preparation under the skin as follows:

For the inoculations the birds may be placed either on the ground or on an improvised table such as is used in caponising. They should be held by the helper, right side down, and with the back to the operator. After the syringe is filled with the carbolic acid, some of which is poured into a cup or saucer, the needle is connected. Next, between the thumb and finger of the left hand of the operator, a small amount of skin is pinched up just behind the left shoulder of the bird. The point of the needle is thrust through the skin just between the thumb and finger, care being taken not to push it into the muscles beneath, or (what is more difficult to avoid) thrust it out through the skin again on the other side of the thumb and forefinger. In other words, the aim is to project the needle just between the skin and the layers of muscle. After the needle has been successfully inserted about three-quarters of an inch, exert a slight pressure with the thumb and finger to clamp the skin about the needle and thus prevent a set-back of the fluid, then with the right hand force the carbolic acid into the bird. This must be done slowly, for it is necessary for the fluid to dissipate between the skin and the musculature.

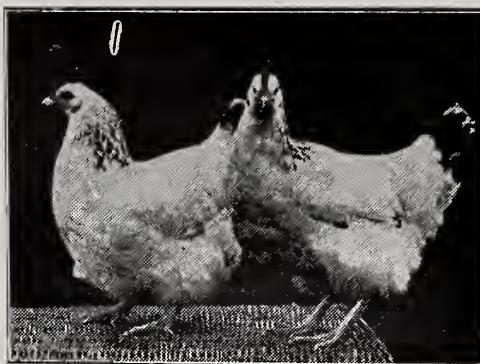
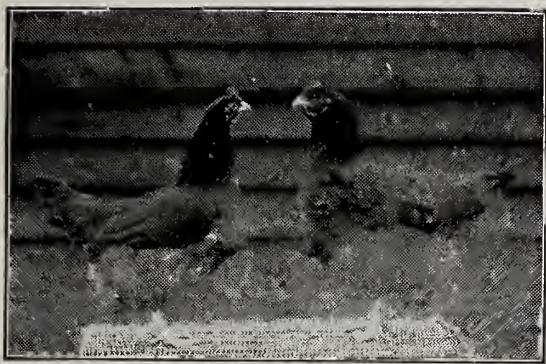
These inoculations should be made on successive days, but never twice successively on the same side of the body or neck.

That is all to the good, but the main efforts of the poultryman should be to prevent this fell disease by hygienic conditions. Unhealthy houses, small runs, and tainted soil cannot be combated by inoculation. We must remove the causes. As this report says: "Keeping a large number of fowls together in a single flock is strongly advised against unless there is at hand some immediate means of dividing the yards and flock if cholera or any other similar infectious disease enters."

Purchased Degrees.

Much interest has been expressed at the offer made to the Editor of a Diploma by the Odessa University, Washington, U.S.A. One of the latest is our contemporary *Capital*, of Calcutta, who advises those desiring such bogus honours to hurry up ere they are too late.

THE TRING PARK POULTRY



RED SUSSEX.
Cup, International, 1908; 2nd Dairy; and
2nd Royal, 1910.

LIGHT SUSSEX
2nd Redhill; 3rd Royal and International.

FARM.

THE Tring Poultry Farm is first and foremost a utility farm. It is true there are a large number of extremely fine stock birds, some of which have given a very good account of them-

the fore it must not be assumed that exhibition points are neglected. That it is possible to combine utility and fancy features has been proved on many occasions, but never



GENERAL VIEW OF CENTRAL POULTRY FARM.

[Copyright.]

selves in the exhibition pen, while one of the White Leghorn cockerels, which is mated to some exceedingly promising hens, is brother to the bird which won first prize at the Crystal Palace last year. The same story is true in other varieties, and while utility features are kept to

have we come across a better example than at Tring.

THE PLAN OF OPERATION.

The plan upon which the poultry department of this estate is worked is extremely in-

TRADE SUPPLEMENT

teresting. There is one central establishment where nothing but poultry is kept, while in addition there are nine homesteads—for Lord Rothschild farms over 2,000 acres—at each



THE CRAMMING SHED AT HASTOE.

[Copyright.]

of which one distinct variety, and only one, is specialised in. Cockerels are supplied from the central establishment to the various homesteads, and thus the excellence of the stock is maintained in a manner which would otherwise be quite impossible. In all other respects, however, the central and the branch farms are quite separate, having no connection whatever with one another. Separate accounts are kept, and, in fact, each homestead is entirely responsible for the birds living at that particular place. The head poultryman has the right to the first pick of any young stock reared at the homesteads, and those he selects for exhibition or for breeding-pens are debited in the ordinary way.

BREEDS AND VARIETIES.

A considerable number of breeds and varieties are maintained. Sussex are represented very strongly, there being several pens of Red, Light, and Speckled; of Orpingtons

there are White and Buff; of Leghorns White and Brown; while some remarkably good Indian Game complete the stock. There are also American Bronze Turkeys, Embden and Toulouse Geese, and Buff Orpington Ducks. As we have already pointed out, the stock combines in a very marked degree utility and fancy characteristics. Many of the birds we had the pleasure of examining are of high quality as regards their exhibition points, while we were assured that their economic qualities are even better. The prizes which have been obtained during the last few years include awards at London Dairy, International, Royal, Birmingham, and Leeds Shows. It is interesting to note that among the present stock of Red Sussex there are winners of the cup at the International Show and second prize at the "Royal," while among the turkeys there are



POULTRY PENS AT HASTOE.

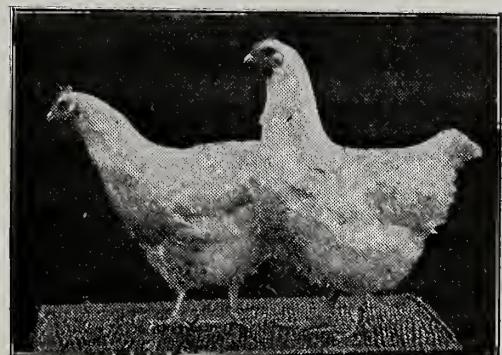
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winners at the Dairy, International, Leeds, and Birmingham Shows.

THE FATTENING ESTABLISHMENT.

About a mile distant from the home farm

there is a large fattening establishment which is conducted on Sussex lines. About 4,000 chickens pass through the fattening-pens in the course of a year. All the birds not disposed of privately go to London. The home supply of chickens, though consider-



WHITE ORPINGTON PULETS.

able, does not equal the demand, and the number is made up with Irish birds. It is pleasing to note that the quality of these latter birds has advanced greatly during the last few years—the colour of the legs and meat, the general texture of the flesh, and the smallness

marketing chickens are Indian Game-Buff Orpington and Indian Game-Red Sussex, and several pens of these birds are kept. Those among our readers who have followed the principal table-poultry shows during the last few years will remember how very successful Lord Rothschild has been with birds of this mating. The fattening business is quite distinct from the other branches of the farm, and the birds are bought from the homesteads at their ordinary market value. The fattening-shed, with accommodation for about 400 birds, is up to date, and excellently equipped in all respects.

THE CENTRAL POULTRY FARM.

The central poultry establishment is one of the best we have seen, and certainly no trouble has been spared to make it suitable in every way. The houses, built on the scratching-shed principle, are large, roomy, and substantially made; the runs are large, and are on the side of a hill facing south, protected from the north by a wood. Some of the runs extend for a little way into the wood, and we can



A VIEW AT THE CENTRAL FARM, SHOWING SOME OF THE BUILDINGS
IN THE BACKGROUND.

[Copyright.]

of bone all showing a very marked improvement. Ground oats are relied on entirely during the fattening period, and it is interesting to note that the oats are ground on the estate, special mill-stones being employed for the purpose. The favourite crosses for producing

conceive of no better arrangement. Great care is evidently taken in maintaining the purity of the soil, and nowhere on the whole estate did we see a square yard of tainted or even slightly worn ground. The lower two feet of the fencing between the runs is boarded.

TRADE SUPPLEMENT

While the houses and runs, and, in fact, all the buildings, are absolutely modern in construction and equipment, it must not be thought for a moment that they are in the least extravagant. This is certainly not the case. Everything is built on excellent lines ; nothing but good material is used ; but we can assert without fear of contradiction that not a penny has been wasted in laying out the whole farm. Everything is intensely practical, carrying out the aims and ideals of the whole estate.

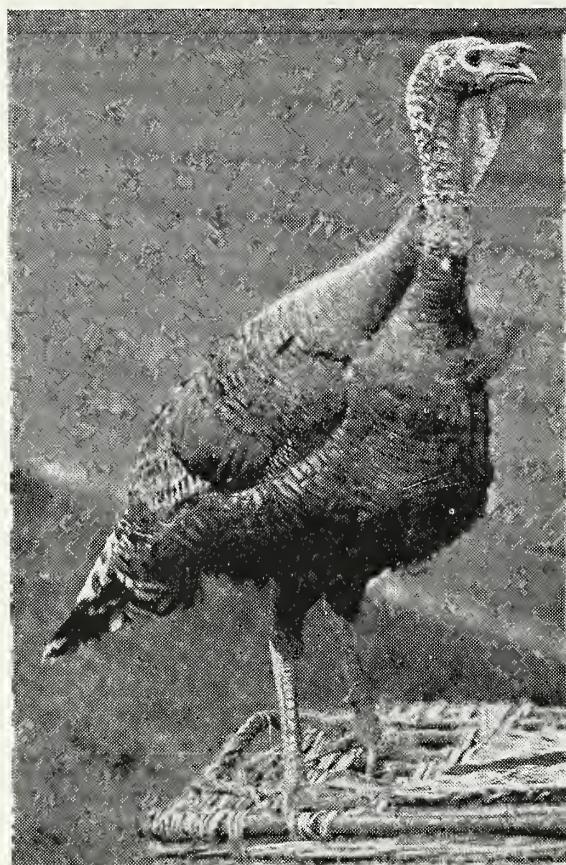
THE BUILDINGS.

The brick-built incubator-house is large and well ventilated ; its cement floor ensures the steadiness of the machines—a very important point in artificial incubation. There are five machines, with an egg capacity of 550. Although a little natural hatching is done, this is of merely secondary importance and probably 95 per cent. of the chickens are hatched artificially. On April 11 there were rather more than 700 chickens running about, while the five incubators were filled with eggs. The exhibition-shed is well arranged, as is also the granary, the store-room, and the other sheds necessary to the carrying on of a large business.

THE TRING TURKEYS.

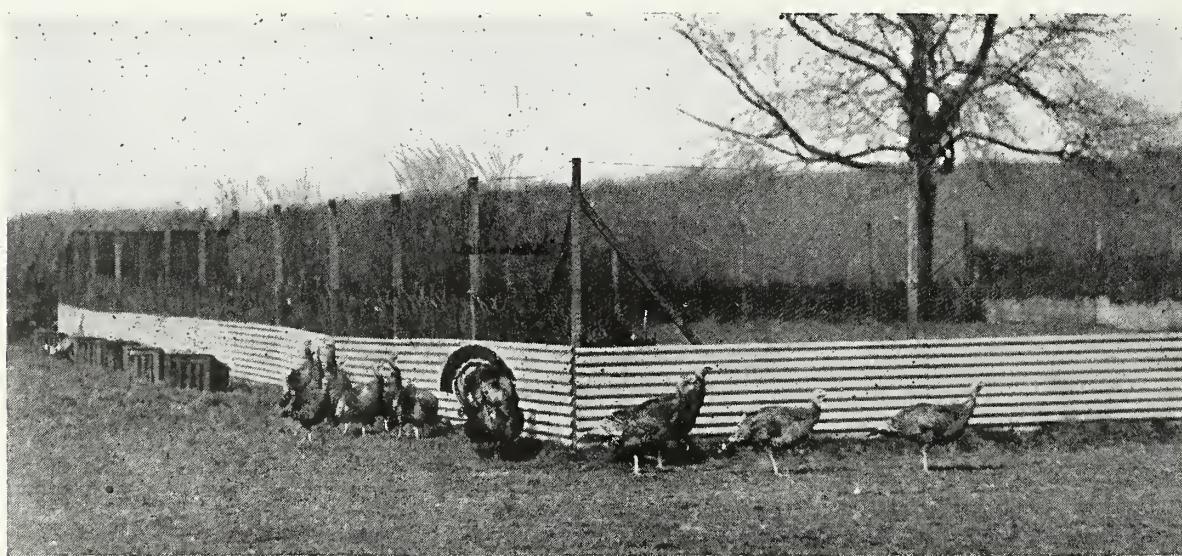
At the Shire Lane Farm the speciality is turkeys, and a large number are reared annually. The stock birds are confined in large runs,

from which they are liberated for a few hours every day. The turkeys at Tring Park hold a wonderful record, for at the last nine Smith-



AMERICAN BRONZE TURKEY.
2nd International and Leeds, 1910.

field Shows they have secured the Cup for the best turkeys upon no fewer than seven occasions.



TURKEYS AT THE SHIRE LANE FARM.

[Copyright.]

THE AMATEUR'S GUIDE FOR MAY.

A LATE spring has its advantages as well as its disadvantages, but whatever the weather may be, poultry-keepers can never afford to wait until it improves, and those who have postponed breeding operations until now will find themselves late next laying season, just as they are late now. The only breeds to hatch at the present time with any chance or securing development in time for laying next winter are a few of the smaller quick-growing kinds, and particularly Leghorns and Anconas. Go for utility strains by all means if your object is egg-production. They are not only much more reliable as layers, but they are not bred to the same size, and they develop and come into profit earlier.

In many yards breeding is already finished, and those who keep exhibition stock are breaking up the breeding-pens in order to keep their birds fit for the summer shows. It is a fact that amateur fanciers are always handicapped through inability to keep their few stock birds in fit condition for showing after the breeding season, and with some of the light-coloured breeds it is next to impossible to devote them to both purposes. With others, however, there is a fair chance of winning a few prizes after the breeding season is over, and in such cases the best specimens should be put under cover at once, for spring showers and sunshine make havoc with the plumage. Hens naturally suffer more than cocks in the breeding season, and the only plan to get them into fairly good condition is to pluck out the broken feathers on the cushion and keep them confined in a airy and well-lighted shed or outhouse, letting them out when the sun has gone down in the evening or on dull days.

The amateur will also find it beneficial to pay a little attention to the toilet of his show birds just now. A wash will improve them, whether they be white or black, and the legs should be scrubbed and dressed with paraffin and sulphur if there is any sign of scaly matter. A little sweet oil rubbed on the comb will improve the texture, whilst white lobes may be sponged with luke-warm milk and, after drying, dusted with violet powder. These are preliminary preparations whose value will be fully appreciated later on.

Attention must now be largely concentrated upon bringing on the young stock, and those who have limited accommodation naturally experience more difficulty in getting birds to grow than those who can make use of an unlimited range. The only way to overcome the difficulty is to use food that will stimulate growth. Meat is an absolute necessity for young fowls in confined runs, and it must be given fresh, so that it is no use buying a large supply at this time of year with the idea of making it last a week or more. I much prefer cooked lean meat or lights to green bone for young stock, as the latter frequently causes scouring.

Another important point is to separate the sexes as soon as possible after the birds have been weaned. Cockerels of some of the more precocious breeds, when little more than three months old, begin to make themselves a nuisance, and if they are left until they are a little older three or four young cocks will worry the life out of a flock of pullets, and do a great deal of harm in checking their growth. It is easy to distinguish the sexes at an early age in these precocious breeds, so the work of separation should be done without delay.

Those who have a few early chickens that can be utilised for the table should remember that there is no time like the present for marketing plump young birds. Some amateurs do not like the idea of killing chickens little more than three months old, but they must remember that by keeping their birds for another couple of months, when there will be a comparative glut in the market, they will probably realise less money. Make hay while the sun shines, and sell your chickens whilst prices are high.

C A P O N S.

TRANSLATED from "MAISON RUSTIQUE DES DAMES."
By A CORRESPONDENT.

T HE name capon is given to male fowls in which the faculty of reproduction has been destroyed. In this state the cocks exhibit a greater development, their flesh is more delicate, and they are more easily fattened.

Cocks are generally subjected to the operation of caponising about the age of four months, because at this period the parts to be removed are sufficiently developed to be handled and taken out; somewhat cool weather should be selected, rather damp than dry, and the season of great heat should be avoided.

Before commencing operations, all the cockerels to be caponised and fit for the purpose are gathered together under coops and are carefully examined so that those may be picked out which would be more useful as cocks. The operation should always be performed in the morning before the birds have been fed. The tools required are a sharp bistoury or a pair of very sharp scissors and a large needle threaded with waxed thread. The bistoury should be a good one, because the cleaner the wound the better the chance of its healing.

An assistant places the bird, on the knees of the operator, upon its back, head downwards, and holds it securely—the rump is turned forwards, the right leg fastened or held alongside the body and the left leg drawn backwards so as to expose the left side in which the incision is to be made. After stripping the feathers off the breast-bone and round about, the skin is picked up with the point of the needle and a transverse incision 3-4 centimetres (1½—1¾ in.) is made. As soon as the skin is cut a muscle will be seen underneath; this is lifted up with the aid of the needle and a little steel hook (made for the purpose) and is separated from the intestines, it is then cut across either with the bistoury or the scissors; the peritoneum then comes into view, a thin, supple, transparent membrane; an incision is made in this just large enough to permit the introduction of the finger into the abdominal cavity. If any portion of the intestine threatens to escape, the operator pushes it back very carefully into the cavity, then, introducing the index finger of the right hand, well greased, he passes it under the intestines, towards the region of the kidneys a little towards the right side and above the rump. It is a matter of some difficulty to reach this point, especially if the cockerel be of a large breed.

Then the finger encounters a body of the size of a fairly large haricot bean, smooth and movable, although adherent; this is torn off and drawn towards the opening, through which it is extracted,

this part of the process requires some address and precision; this body sometimes slips through the fingers before it can be got out, and it is then very difficult to find it again; if it has been properly detached it may remain in the animal's body without serious inconvenience; it is best, however, to remove it. The process is then applied to the second organ, which is to be found alongside the first one, but to the left; the edges of the wound are then brought together and kept in contact by a few stitches made with the needle and waxed thread. In putting in these stitches, care must be used, each time that the needle is thrust in, not to wound the intestines or to sew them up in the suture. If this happens death will ensue. As soon as the operation is over the comb is cut with the scissors.

Treatment after operation is very simple. The cockerels are put under a coop in a quiet place and there they are left for two or three hours with no other food than a little crumb of bread or groats. It is best not to let them out into the poultry-run, because, suffering as they are, they might have to defend themselves (from other cocks) and make efforts in so doing prejudicial to the healing of the wound. They may be turned loose in the small enclosure kept for sitting hens, for there they are not likely to be disturbed.

Young capons should rest on clean straw on the ground; if allowed to attempt to perch the wound is strained and its healing delayed. They must be well looked after for three or four days and fed during this time separately and rather liberally. They may then return to their ordinary life.

Caponised cockerels should not be kept out of the poultry-run longer than necessary, because the cocks there will refuse to recognise them; they will have to fight for their position, and this must be especially avoided.

In order to avoid this fighting and the accidents which result from it, some poultry-keepers let the cockerels into the poultry-run two or three hours after operation, with no other precaution than that of giving them food and drink while under the coop. This is wrong and should not be done.

If one of the caponised cockerels is seen the next day or a day or two after the operation to be drooping and sickly, the wound should be examined. If inflamed, bathe it with a little warm water on a sponge or piece of soft linen, and then rub it once or twice a day with a little camphor ointment. If the intestine has been seriously injured, there is no remedy and the animal will die. Many poultry-keepers put oil and wood ashes over the suture, possibly to keep away the flies. The practice is not to be recommended, because the oil and wood ashes may prevent the joining of the edges of the wound. When the operation is properly performed it almost invariably is successful.

It sometimes happens that certain cockerels which are either difficult to operate upon or in which the operation has been badly performed die almost immediately; these birds should be bled at once; they are very good to eat.

The practice is to cut the combs of birds which have undergone this operation. This may appear to be mere useless cruelty, though it may act as a relief to the original wound. Further, a capon whose comb has not been cut will never be accepted as a capon on the market. He thus loses his market value.

The combs and kidneys of capons are much

sought after as delicacies in the large markets. They are served with certain ragoûts, such as warm patties, *fricassée* pullet, calves' head, &c., &c.—they make a delicate dish.

AMONG THE BIRDS IN MAY.

By J. W. HURST.

THE BREEDING-PENS.

The earlier mated breeding stock will in many instances now be ready for disposal. Having been mated for many months, there will be some falling-off in the fertility and rearing percentage unless the males exhibit exceptional vigour, and in any case it is preferable to break up these pens and give the birds a rest. Spring-mated breeding stock may, however, be kept in their pens, and their eggs used for incubation, for some time longer—provided they are kept under observation, and that the condition of all (especially the roosters) is ascertained from time to time. In breaking up the breeding-pens the recuperative object must be kept in view in the treatment of the birds, and the primary and great necessity is the complete and continued separation of the sexes throughout the whole period allowed for rest and the recovery of a suitable breeding condition. It is, therefore, desirable to pen the roosters as far afield as possible, on clean ground, and amid new surroundings; treating the hens as far as possible in a similar manner, and making sure that each sex is out of sight and hearing of the other.

To keep breeding stock too long mated is never satisfactory or profitable, no matter what the object of breeding may be, and it is particularly inimical to success in the case of birds that may be required for showing.

BUILDING THE "STRAIN."

The chickens that are now being reared to supply the pullets for the renewal of the laying stock have, it may be supposed, been bred from a parent stock of some amount of proved prolificness—otherwise the process of strain-building can be but a very uncertain affair. Provided the hens from which the present pullet chickens have sprung have been more than average layers, and were constitutionally and otherwise fit, a reproduction of that prolific character may be expected to manifest itself in a proportion of them. Selection is not, however, all that is required in this connection, because it does not necessarily follow that strain will be perpetuated in this manner unless the management is suitable. The capability may exist, but it may not be developed and mature without proper treatment in rearing, and it must also be recognised as a fact that it is not every pullet that will be worth the trouble of careful rearing, despite the indications of pedigree. It is far easier than might be supposed to quite spoil the chances of the birds that would otherwise be the most promising representatives of a laying strain, and this may be done either by allowing incompletely developed birds to reach a nominal maturity or by a system that tends to the production of abnormal size. It should be remembered that birds are worthless for the purpose of building a strain if they were not hatched at the proper season, if in

rearing they have sustained any serious check to steady progress, and if they are too coarse in build.

SEASONABLE COMPLAINTS.

Disease is very commonly more prevalent when the weather gets warmer than it is during the cold months of the year, or it is at any rate more noticeable because the fowls are so much more numerous. Nevertheless, the mere fact of increase is a frequent cause of disorders, the ground easily becoming foul and the houses too small for healthy accommodation. Colds, catarrh, bronchitis, consumption, and the group of ailments described as roup, are among the commoner warm weather troubles — to which may be added those that are caused by parasitic infestation. Diarrhoea and dysentery are often seasonable complaints in so far as they are

MARKETS & MARKETING.

Week Ending March 25.

The markets were quiet, and although business was somewhat brisker the demand for poultry was not great. Well-fattened young fowls were in good request, but the supply was very limited indeed. A few tiny ducklings were to be seen, and those averaged excellent prices. The egg trade was extremely poor.

Week Ending April 1.

The markets were considerably brisker than the preceding week, spring chickens and ducklings being in evidence and meeting with a ready sale. Foreign poultry was well represented, and some very good



BOXES WHICH WILL ULTIMATELY ARRIVE IN LONDON FILLED WITH EGGS.

[Copyright]

produced by overheating and the lack of adequate ventilation, whilst enteric is suggestive of impure water or the neglect of cleanliness—the results of which are more quickly apparent in warm weather. Most seasonable complaints may be in a great measure avoided by the taking of obvious seasonable precautions, more especially relative to housing, sheltering, area, and condition of runs, and the quality and character of feeding stuffs.

SEASONABLE EFFORTS.

In view of the seasonable demand and the limits of its duration, very special efforts should be made to market all marketable fowls without any unnecessary delay. Experienced feeders will realise that although time is short, skill and suitable food can do much, but the inexperienced must avoid the common mistake of marketing birds that are unready. There are certain market requirements which must be met, even when the demand of the season is most insistent, and the neglect of proper preparation is never economical.

prices were realised, particularly for petits poussins, some excellent samples of which were present. There was a further drop in the price of eggs, supplies being very abundant.

Week Ending April 8.

While what may be termed old poultry was very plentiful, spring produce was scarce, and realised excellent prices. Chickens are late this season, and the fatteners are complaining that they cannot secure anything like a sufficient supply. This is likely to keep prices up for some time to come.

The egg trade was rather firmer. It is interesting to observe that Danish eggs were fetching a higher price than English new-laid.

Week Ending April 15.

Spring chickens were very scarce indeed; as a matter of fact, they were scarcer than has been the case for some years past. Prices maintained a very high level indeed, owing purely and simply to the small supply. The egg trade was very firm indeed.

TABLE OF PRICES REALISED FOR HOME, COLONIAL, AND FOREIGN POULTRY, GAME, AND EGGS FOR THE FOUR WEEKS ENDING APRIL 22, 1911.

ENGLISH POULTRY—LONDON MARKETS.					FOREIGN POULTRY—LONDON MARKETS.					IMPORTS OF POULTRY AND GAME.				
DESCRIPTION.	1st Week.	2nd Week.	3rd Week.	4th Week.	COUNTRIES OF ORIGIN.	Chickens.	Ducks.	Ducklings.	Geeses.	Turkeys.	Per lb.	PRICES REALISED DURING THE MONTH.		
	Each.	Each.	Each.	Each.		Each.	Each.	Each.	Per lb.	Per lb.	Per lb.	Game.	Poultry.	
Surrey Chickens	3/0 to 5/6	3/0 to 6/0	3/6 to 6/0	3/6 to 5/6	Russia	5/6	5/6	2/3 to 2/9	0/5 to 0/5 ¹	0/8 to 1/0		£9,031	£85,275	
Sussex "	3/0 " 5/6	3/0 " 6/0	3/6 " 6/0	3/6 " 5/6	Belgium	5/6	5/6	—	—	—		£3,065	£3,065	
Yorkshire "	2/6 " 3/6	2/6 " 3/9	3/9 " 2/6	4/0 " 2/9	France	3/9	3/9	—	—	—		£11	£2,311	
Boston "	2/6 " 3/9	2/6 " 3/9	3/9 " 2/6	4/0 " 3/0	United States of America	4/6	4/6	—	—	—		£2,627	£42,627	
Essex "	2/6 " 4/0	2/9 " 4/0	4/0 " 2/9	3/6 " 3/0	Austria	4/6	4/6	—	—	—		£18,458	£18,458	
Petits Poussins	1/6 " 1/9	1/6 " 1/9	1/6 " 1/9	2/0 " 1/9	Canada	3/9	3/9	—	—	—				
Irish Chickens	2/3 " 3/0	3/0 " 2/0	3/6 " 2/0	3/6 " 2/0	Australia	3/0	3/0	—	—	—				
Live Hens	2/0 " 3/0	3/0 " 2/0	3/0 " 2/0	3/6 " 2/0		3/0	3/0	—	—	—				
Aylesbury Ducklings..	7/0 " 7/6	4/0 " 7/6	3/6 " 7/6	3/6 " 7/6		6/0	5/0	—	—	—				
Ducks	3/0 " 4/6	2/3 " 4/0	2/6 " 4/0	2/6 " 4/0		5/0	5/0	—	—	—				
Goslings	5/0 " 7/0	5/0 " 7/0	5/6 " 7/0	5/6 " 7/0		8/0	8/0	—	—	—				
Turkeys, Irish	0/9 " 1/0	0/8 " 1/0	0/10 " 1/0	—		—	—	—	—	—				
ENGLISH GAME—LONDON MARKETS.					Capercailzie.....					COUNTRIES OF ORIGIN.				
DESCRIPTION.	Each.	Each.	Each.	Each.	Black Game.....	Black Game.....	Black Game.....	Black Game.....	Black Game.....	Game.	Poultry.	Game.	Poultry.	
	Each.	Each.	Each.	Each.	Ptarmigan	Ptarmigan	Ptarmigan	Ptarmigan	Ptarmigan	0/9 "	1/0	£9,031	£85,275	
Grouse	—	—	—	—	Partridges.....	1/7 "	1/9	1/7 "	1/9	Russia	£79	£79	£79	
Partridges	—	—	—	—	Pheasants.....	2/9 "	3/0	2/9 "	3/0	Austria-Hungary	£11	£11	£11	
Pheasants	—	—	—	—	Bordeaux Pigeons	0/10 "	1/0	0/10 "	1/0	France	—	—	—	
Black Game	1/0 to 1/2	1/0 to 1/3	1/0 to 1/3	1/0 to 1/3	Hares	2/0 "	3/0	2/0 "	3/0	United States of America	£2,871	£2,871	£2,871	
Hares	2/0 " 3/0	2/0 " 3/0	2/0 " 3/0	2/0 " 3/0	Rabbits	0/5 "	0/7 ¹	0/5 "	0/7 ¹	Other Countries	—	—	—	
Rabbits, Tame	1/6 " 2/6	1/6 " 2/6	2/0 " 2/0	2/0 " 2/0	Snipe	—	—	—	—	Totals	£12,592	£151,736	£151,736	
ENGLISH EGGS.					IRISH EGGS.					IMPORTS OF EGGS.				
MARKETS.	Per 120.	Per 120.	Per 120.	Per 120.	DESCRIPTION.	1st Week.	2nd Week.	3rd Week.	4th Week.	MONTH ENDING MARCH 31, 1911.	COUNTRIES OF ORIGIN.	Quantities in Gt. Hund.	Declared Values.	Declared Values.
	8/0 to 9/0	8/0 to 9/0	8/0 to 9/0	8/0 to 9/0	Per 120.	Per 120.	Per 120.	Per 120.	Per 120.	Russia <td>109,887</td> <td>£41,085</td>	109,887	£41,085		
LONDON	8/0 to 9/0	8/0 to 9/0	8/0 to 9/0	8/0 to 9/0	French	7/0 to 8/6	6/6 to 8/0	6/6 to 8/6	6/6 to 8/6	Denmark	307,821	£144,608		
Provinces.	Eggs per dozen.	Eggs per dozen.	Eggs per dozen.	Eggs per dozen.	Danish	7/6 " 9/0	7/6 " 9/3	7/6 " 9/3	7/6 " 9/3	Germany	117,969	£48,116		
MANCHESTER	0/10	0/10	0/10	0/10	Italian	7/6 " 8/9	7/0 " 9/0	7/0 " 9/0	7/0 " 9/0	Netherlands	107,328	£49,006		
BRISTOL	0/9	0/9	0/9	0/9	Austrian	6/6 " 7/0	6/0 " 7/0	6/0 " 7/0	6/0 " 7/0	France	108,889	£51,769		
					Russian	0/9 ¹ 0/10	0/10 0/10	0/10 0/10	0/10 0/10	Italy	258,933	£124,416		
										Austria-Hungary	183,283	£74,383		
										Other Countries	182,228	£64,930		
										Totals	1,376,338	£595,313		

HOT SAUCES FOR CHICKENS, &c.

BECHAMEL SAUCE.

Prepare in the usual way a large onion, a carrot, a few outer sticks of celery, and a dozen button mushrooms. Having roughly cut these up, put them into an enamelled saucepan with a quart of white stock, a bunch of savoury herbs, and a seasoning of salt and pepper. Boil gently until the flavour has been extracted from the various items and the liquid reduced to about half the quantity, then strain it off into another saucepan; add an ounce of fresh butter and a tablespoonful of arrowroot, or fine flour mixed quite smoothly with a little milk; stir constantly over a moderate fire until the sauce becomes sufficiently thick and creamy, when it is ready for serving. If a richer sauce is preferred use a little more butter, or cream, instead of milk; and if a rather sharp, acid flavour is considered more enjoyable add the rind and strained juice of a fresh lemon to the other ingredients.

BREAD SAUCE.

Put into a scrupulously clean saucepan half a pint of milk, an onion stuck with half a dozen peppercorns and three or four cloves, and four ounces of fine, stale breadcrumbs. Stir with a small wooden spoon over a moderate fire until the sauce boils, after which draw the saucepan on one side, and add an ounce of butter and simmer gently for ten minutes, stirring frequently. When ready remove the onion, &c., add a few tablespoonfuls of good, thick cream, or another ounce of butter, and when this has been well stirred in the sauce is ready for use, and should be sent to table in a very hot sauce boat.

CELERY SAUCE.

Put three ounces of fresh butter into a saucepan, and when it melts add the white part of two heads of celery which has been cut in pieces an inch long; add also a medium-sized onion peeled and cut in thin slices, and allow the whole to stew gently until the vegetables are quite soft; then sprinkle over them a dessertspoonful of flour, and when this has been well stirred in add half a pint of milk or good white stock, a seasoning of salt, pepper, and grated nutmeg, and continue stirring until boiling-point has been reached. Rub the whole through a sieve, add a few tablespoonfuls of good, thick cream, a little more seasoning if necessary, and a flavouring of fresh lemon-juice; then thoroughly re-heat, and serve at once.

SOUBISE SAUCE.

Peel and cut in quarters two large Spanish onions, or what would be equal to them in ordinary onions. Put them into a stewpan with plenty of cold water and boil them until tender; then drain off the water and chop the onions very finely, then put them into a clean stewpan with a pint of milk, two ounces of fresh butter, a seasoning of salt and pepper, and two tablespoonfuls of flour previously mixed to a smooth paste with a little cold milk or water. Add a flavouring of lemon-juice, and stir the whole over a gentle fire until thoroughly hot, when the sauce is ready for use.

DUTCH SAUCE.

Put three ounces of butter into a saucepan, and as it melts stir in an ounce of fine flour; when the

mixture is perfectly smooth add gradually half a pint of milk and continue stirring until the sauce boils; then draw the saucepan on one side and add the well-beaten yolks of two large fresh eggs, a seasoning of salt and pepper, and a tablespoonful of strained lemon-juice. Stir until the whole is thoroughly hot, taking great care that the sauce does not again reach boiling-point, otherwise it will speedily form into lumps, thus being rendered quite unfit for use. This delicious sauce is generally served as an accompaniment to boiled fowls.

PARSLEY SAUCE.

Put into a small saucepan two ounces of fresh butter, and when this is sufficiently melted mix with it quite smoothly two ounces of fine flour, using a small wooden spoon for the purpose. When the flour is cooked enough add, very gradually, a pint of milk, a seasoning of salt, pepper, and grated nutmeg and two dessertspoonfuls of finely-minced parsley. Stir constantly until the sauce boils, then add another ounce of butter and a tablespoonful of lemon-juice, and when the butter is quite dissolved serve the sauce in a hot tureen, or, if preferred, pour it over the boiled chickens first immediately before sending them to table.

TOMATO SAUCE.

Take as many sound, ripe tomatoes as are likely to be required, and after carefully removing the seeds and juice put them into a saucepan with a bunch of savoury herbs, a seasoning of salt and pepper, a tablespoonful of chopped onion, and just sufficient gravy or stock to moisten the whole. Stir these ingredients over a moderate fire until the tomatoes and onion are quite soft, then remove the herbs and gently press everything else through a sieve; return the pulp thus obtained to the saucepan, add a thickening of roux, a tablespoonful each of malt and tarragon vinegar, and a dessertspoonful of chopped parsley. Stir until the sauce boils, when it is ready for use.

APPLE SAUCE.

Peel, core, and slice half a dozen large sound cooking apples and put them into a saucepan with just sufficient cold water to keep them from burning; let them simmer gently until the fruit is reduced to a pulp, being careful to stir frequently with a small wooden spoon. Turn it into a bowl, add two large tablespoonfuls of sugar, an ounce of fresh butter, and a few drops of lemon juice, mix well, and serve very hot.

A Sensible Proposal.

It is stated that there are upwards of 5,000 poultry-keepers within the city limits of Buffalo, New York, having an aggregate of over 75,000 birds. These poultrymen have presented to the Aldermen and Councillors of the city a proposed ordinance, asking that a licence be issued to everyone who wishes to keep poultry within the city, the annual fee to be one dollar. It is suggested that a poultry inspector would be employed, his services to be at the disposal of the poultry-keepers, for, we suppose, advice and guidance. That should prevent "poultry slums," and check the annoyances and dangers which often are found under such conditions.

AGRICULTURAL COLLEGES AND POULTRY INSTRUCTION.

To the Editor of the ILLUSTRATED POULTRY RECORD.

SIR.—The conclusions drawn by "Statistician" seem to be somewhat lacking in perception. It is difficult to see why one list should be put in the second place, while another is classed as "the better grade," apparently because these (better grade) run either several "short courses" or employ someone who is barred from everything except poultry. Two of the best-known authorities in England—one in the Midlands and one in the West—are both large farmers, yet devote a considerable amount of their time to poultry instruction.

Again, many of us think aviculture should go hand-in-hand with agriculture, or, in other words, poultry on the farm rather than poultry-farming is the soundest method of instruction. A three weeks' or a three months' course is useful to a student wishing to gain a certificate, but little real experience can be gained in such a short time in the higher branches of mating, breeding, or exhibiting. From the college I am writing, one poultryman, and sometimes two, are exclusively engaged for practical poultry work—*i.e.*, incubating, rearing, fattening, trussing, &c. This is quite apart from in-college lectures. So far from "possibly keeping a few hens," the receipts and expenses under this head run into some hundreds of pounds. Research work has been done by the scientific staff. Students are encouraged and have opportunities of taking part in the various methods of poultry management. Special examinations and prizes are given. Unless mistaken, other agricultural colleges run their poultry division on much the same lines, and it seems a mistake to write them down merely because the lecturer may have some knowledge and devote some of his time to other stock.

T. R. ROBINSON, F.S.I., &c.

Wye, Kent.

[There is much to be said from Mr. Robinson's point of view, and I am glad to know that Wye is doing more than appeared from the report upon which my article was based. On referring again to the statement given in the annual report, I find (1) that 144 hours are given in each of the first and second years to "Dairy, Poultry, Fruit, Farriery, and Carpentry," inclusive of practical and field work, about one-third of the time stated, which works out at an average of 29.8 hours per annum for each subject; (2) that no mention is made in the courses of students engaged specially in poultry; and (3) that under the heading "College Farm" nothing is said about a poultry plant. In justice to Mr. Robinson, the records supplied to the Board should be more representative and complete. My article has had the effect of drawing forth information not hitherto given.—"Statistician."]

Pennsylvanian Poultry.

The Deputy State Secretary of Agriculture makes claim that Pennsylvania has become one of the greatest poultry-raising States in America, that more than 12,000,000 fowls of various kinds will be raised this year, representing a value of nearly £1,300,000, and that the output is annually 75,000,000 dozens of eggs.

NORTHERN NOTES.

By FRED. W. PARTON.

THE Rhode Island Red is making many friends in the North of England, especially in Yorkshire, where it is rapidly becoming a firm favourite, and bids fair to out-rival some of the older-established breeds in public favour. The testimony we have as to its economic qualities is very satisfactory. In regard to this, however, we hope shortly to give our personal opinion, since the Yorkshire Council for Agricultural Education has recently imported a breeding-pen of single-comb Rhode Island Reds from America. On one point, however, we are firmly convinced—namely, that there are few, if any, other breeds better adapted for some of the more cold and exposed districts of the Northern counties, and this alone should be a recommendation. By the appearance of the chickens we have seen this season they are undoubtedly rapid growers, and show all the signs of developing into large and robust birds. Much diversity of opinion exists as to the percentage that come true to type and colour. Every variety has undergone the same criticism in its young days, and yet have pulled through. Probably the same will eventually be said of the breed in question. A club is in existence in the West Riding of Yorkshire which will encourage and strengthen the position of this useful breed.

Fortunate indeed have been the poultry-keepers in the cold, North Country this season in the exceptionally mild weather that has been experienced. At the same time, chickens do not seem to be so plentiful as they were during the last three or four seasons. There is a general and widespread complaint that a large percentage of the eggs are infertile, and that the mortality is higher than usual. This is somewhat difficult to account for, since the severity of the past winter cannot, as is usual, be made the scapegoat for infertility. One reason will not explain the failure in every case, for it may be due to one of several things. We suspect, however, that the undue forcing of pullets since last November accounts for failure in more than one yard with which we are acquainted.

An attempt is being made to form an egg-collecting dépôt at Wykeham, in the North Riding of Yorkshire. It is a purely agricultural district, and within its range for collection, among others, are the villages of Forge Valley and Hutton Buseel. If the farmers can be persuaded to combine, better prices for their eggs will be obtained, despite their nearness to Scarborough, with its enormous consumption of eggs, to which town most of the eggs go. Captain and the Hon. Mrs. Dawnay are very keenly interested in the scheme, which is being worked by the North-Eastern Counties Committee of the Agricultural Organisation Society.

American Visitors.

Mr. Frank L. Platt, associate editor of the *Reliable Poultry Journal*, and Mr. A. O. Schilling, the well-known poultry artist, are coming to visit Europe shortly, the last-named of whom is going to Munich to take a course at one of the Art Schools in that city. Both will receive a warm welcome for their own sakes and that of their connections.

DEPARTMENT OF AGRICULTURE and TECHNICAL
INSTRUCTION FOR IRELAND.

CONFERENCE
ON THE
POULTRY INDUSTRY.

Aberdeen Hall, Gresham Hotel,
Sackville Street, Dublin.

MAY 4 and 5, 1911.

PROVISIONAL PROGRAMME.

THURSDAY, 4th May.

10 a.m.—CONFERENCE OPENS in the Aberdeen Hall.

CHAIRMAN:

The Right Hon. T. W. RUSSELL, P.C., Vice-President of the Department of Agriculture and Technical Instruction for Ireland.

ADDRESS OF WELCOME TO THE DELEGATES by His Excellency the LORD LIEUTENANT OF IRELAND.

CHAIRMAN'S ADDRESS.

PAPERS ON EDUCATION AND EXPERIMENTAL WORK, by Messrs. J. R. CAMPBELL, B.Sc., Assistant Secretary in respect of Agriculture, Department of Agriculture and Technical Instruction for Ireland; and WILL BROWN, Department of Poultry Husbandry, West of Scotland Agricultural College, Glasgow.

1 p.m.—INTERVAL FOR LUNCHEON.

2 p.m.—CONFERENCE RESUMES.

CHAIRMAN:

T. P. GILL, Esq., Secretary, Department of Agriculture and Technical Instruction for Ireland.

PAPERS ON PROMOTION OF POULTRY KEEPING, by Messrs. EDWARD BROWN, F.L.S., Honorary Secretary of the National Poultry Organisation Society; and P. A. FRANCIS, Superintending Poultry Instructor, Department of Agriculture and Technical Instruction for Ireland.

3.30 p.m.—PAPERS ON PRODUCTION OF AND TRADE IN TABLE POULTRY, by Messrs. F. B. NASMYTH-MILLER, Poultry Overseer, Department of Agriculture and Technical Instruction for Ireland; and J. W. HURST, Brighton.

4.30 p.m.—PAPER ON TRANSIT OF EGGS AND LIVE POULTRY, by Mr. D. S. PRENTICE, M.R.C.V.S., Superintending Transit Inspector, Department of Agriculture Technical Instruction for Ireland.

5.30 p.m.—Close of First Day's Meeting.

FRIDAY, 5th May.

10 a.m.—CONFERENCE RESUMES in Aberdeen Hall.

CHAIRMAN:

The Right Honourable Sir HORACE PLUNKETT, P.C., K.C.V.O.

CHAIRMAN'S ADDRESS.

PAPERS ON ORGANISATION, by Messrs. J. NUGENT HARRIS, Secretary Agricultural Organisation Society; and R. A. ANDERSON, Secretary, Irish Agricultural Organisation Society.

1 p.m.—INTERVAL FOR LUNCHEON.

2 p.m.—CONFERENCE RESUMES.

CHAIRMAN:

Sir MATTHEW G. WALLACE, President of the Scottish Chamber of Agriculture.

PAPERS ON COLLECTION AND GRADING OF EGGS, by Messrs. JOHN DRYSDALE, Secretary, Scottish Agricultural Organisation Society; and THOMAS S. PORTER, Agricultural Inspector, Department of Agriculture and Technical Instruction for Ireland.

3 p.m.—PAPERS ON SALE OF EGGS. By Messrs. P. HICKEY, President of the Produce Section, Manchester Chamber of Commerce; and L. WILSON, Co-Operative Wholesale Society, Ltd., Manchester.

CONCLUSION OF CONFERENCE.

4.30 p.m.—VISIT TO THE ALBERT AGRICULTURAL COLLEGE, GLASNEVIN.

THE UTILITY POULTRY CLUB'S LITERARY COMPETITION.

WITH the Laying Competition over, the club is now turning its attention to new schemes. With a view to bringing up to date the "Monthly Notes to Poultry-Keepers," which form one of the most attractive features of the Year-Book, the club is organising a competition for the best contributions on the subject with numerous and valuable prizes.

As is the custom with the club, the Competition will be open to everybody, whether members of the club or not, and there is no entry fee.

For the best complete set of monthly notes the prizes are: First, £5 cash and a Hearson's Champion Incubator, given by Messrs. Spratts; second, £3; third, £1 10s. For the best set of notes for six months: First, £3 and "The Encyclopaedia of Poultry," given by the Waverley Book Co., of 7, Old Bailey, E.C.; second, £2; third, £1. For the best set of notes for three months: First, £1 and Vols. 1 and 2 of THE ILLUSTRATED POULTRY RECORD; second, 15s.; third, 10s.; fourth, copy of "Domestic Races of Poultry," given by Mr. E. Brown; fifth, 5s.; and sixth, 5s.

The notes must not exceed six hundred words for any one month, and competitors may send in notes for any number of months, but not more than one contribution in respect to each month. If a set of twelve fails to secure a prize in the first series it may compete for the prizes given for the best contributions in respect to six months. The rules and conditions can be obtained from the hon. sec. of the club, L. W. H. Lamaison, Merstham, Surrey.

The awards will be made by a committee appointed by the club, and in allotting the prizes regard will be had to the utility of the notes to the practical poultry-keeper. No contributions will be received after June 30, 1911.

EGGS AND POULTRY IN NATAL.

FROM the annual report of the Durban and Coast Poultry Club of Natal we cull the following as an indication that the Colony is increasing its production of eggs and poultry:

"I am indebted" (says the secretary) "to the Customs Department for the following figures in connection with imports of dead poultry, eggs, and live fowls into Natal:

Year.	Dead Poultry.	Eggs	Live Fowls.
1908	332,716lb. (£10,462) ...	£5,820 ...	758
1909	166,833lb. (£5,716) ...	£3,702 ...	780
1910	68,007lb. (£2,512) ...	£4,277 ...	1,234
Decrease.....	£7,950 ...	£1,543	
Increase			476

"No more convincing proof that the poultry industry throughout South Africa is steadily advancing is needed than these figures, and in the main it is by such clubs as this that this advancement has been made, and to whom legitimate credit is due."

Owing to extreme pressure on our space we are compelled to hold over Answers to Correspondents. We have, however, replied to all by post.

A GREAT FUTURE FOR EGG-FARMING.

THE possibilities that lie before the industry of egg-production are attracting an increasing amount of attention in the poultry world. It is gradually coming to be realised that our supplies of eggs from abroad are steadily and permanently declining, and that the United Kingdom will soon be faced with the problem of satisfying the home demand with home produce.

Various solutions of the problem are being suggested. Six weeks ago an article in this column advocated the establishment of public egg farms under the provisions of the Development Act, for the purpose of supplying sittings from first-class laying strains at cost price, by which means the production of new-laid eggs would probably be increased by 50 per cent.

In the February issue of THE ILLUSTRATED POULTRY RECORD prominence is given to an article by Captain G. B. Bennett putting forth another set of proposals for a national egg-production scheme. The captain's idea is that what he describes as "Small Poultry Allotment Associations" should be established in every district throughout the British Isles, "with local support under the management of a local committee, and the guidance, advice, and rules of a Central National Society." The objects of the association would be to provide applicants with allotments of any size up to half an acre, to organise a co-operative system of purchasing food-stuffs and other requisites, and a similar system of marketing eggs and poultry.

These are all excellent suggestions as far as they go. They are no substitute for the proposed public egg and chicken farm, but are really a logical extension of that idea. During the past few weeks I have had opportunities of discussing the latter project with a large number of poultry-keepers, some living in sparsely populated country districts and others in the overcrowded towns, some of them cramped in their operations by the walls of a small backyard and others enjoying the scope afforded by holdings of from five to twenty acres. And every man of them has welcomed the project as the most urgently needed and the most effective means of making utility poultry-keeping a stable and profitable industry. It is of little use to tell such men that they can purchase sittings of eggs from 200-egg strains at 7s. 6d. or 10s. a dozen. They simply cannot afford to pay such prices; and the only way of enabling them to take advantage of the trap-nest lies in the establishment of egg and chicken farms under the provisions of the Development Act. With that as the foundation principle, all the useful suggestions of Captain Bennett might be embodied in one comprehensive scheme for promoting the interests of the poultry industry.—By "Lancashire Type" in the *Blackburn Weekly Telegraph*.

State Help in Missouri.

Poultry-keeping in Missouri is an important industry. In fact it claims to lead the entire Union. The legislature has just made a grant of £4,200 to the State Poultry Board, and a proposal is under consideration for a further sum of £2,500 for experimental purposes.

TRADE NOTICES.

A Long Journey.

After a journey of 12,000 miles—i.e., from Adelaide, South Australia—two pens of pedigree White Leghorns have reached the Garth Poultry Farm, Glanconway, Denbighshire. The fowls were dispatched by Mr. A. H. Pudman, whose pen of White Leghorns made a record in egg-production at the Gatton (Queensland) Twelve Months' Laying Competition, which terminated on March 31, 1910. These six birds laid 1,531 eggs, on an average of 255 for the year. The birds now at Glanconway, which are descendants of the laying contest fowls, commenced to lay the day after their arrival and look like continuing for some time.

The "F. and F." Firm.

Owing to the rapid growth of their business, Messrs. Finch and Fleming, of Flitwick, Beds, have been compelled to take more commodious premises, which have the advantage of being alongside Flitwick Station, on the Midland Main Line. They are now in a position to deliver the various goods in which they specialise the same day as the orders are received. We are pleased to know that Messrs. Finch and Fleming have had a very successful season. Although they have been experimenting for some years, this is really the first season that they have placed their own manufactured Incubator on the market, and the results have been most gratifying. The "F. and F." Brooders and Bone-Cutters have also been in great demand, and, from letters received, they have given great satisfaction. Mica grit still retains a firm hold on the poultry public, and while rather dearer than ordinary grit, it is claimed for it that it is cheaper in the long run.

An Attractive Catalogue.

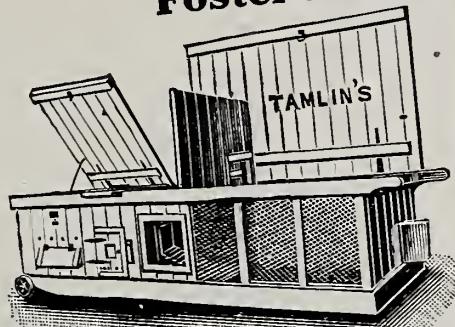
The Utility Poultry Supply Co., of Finchampstead, Berks, has issued a very attractive catalogue, containing information regarding the many specialities for which this firm is becoming so well known. There seems to be nothing which this company does not supply to the poultry-keeper, from stock birds to pocket spring balances, and from poultry-houses to incubator hygrometers. Among the many breeds which are supplied by this up-to-date firm are Combattant de Bruges and Black Faverolles. The Utility Poultry Supply Co. draws special attention to the fact that its business is to cater for the needs of the utility poultry farmer and to supply him with articles of sound construction and utmost value, and with live stock which is noted for its good qualities. We recommend our readers to write for a copy of this interesting publication, which will be sent free on application.

Messrs. Chas. Toope and Son.

Messrs. Chas. Toope and Son, 7, Stepney Square, High Street, Stepney, London, E., horticultural engineers and poultry appliance manufacturers, writing to us on March 30, say:—"During the last six months our poultry-house trade has more than doubled the sales of the previous twelve months. Our Patent Asbestos Incubator has had record sales during the same period. During this time we have dispatched our machines to Norway, the United States, Canada, Belgium, and South America; and we have just delivered the largest consignment of poultry-houses, incubators, and brooders that has ever left this country in a single delivery for H.R.H. the Prince of Broglie, France." The Asbestos Incubator has gained a very firm hold, and is rapidly increasing in favour. The machines are built of asbestos boards, which are very hard, thus rendering them fire-proof, rot-proof, and vermin-proof. Notable features of this particular machine are the combined system of heating by hot air and hot water tank, and the special means of obtaining warm,

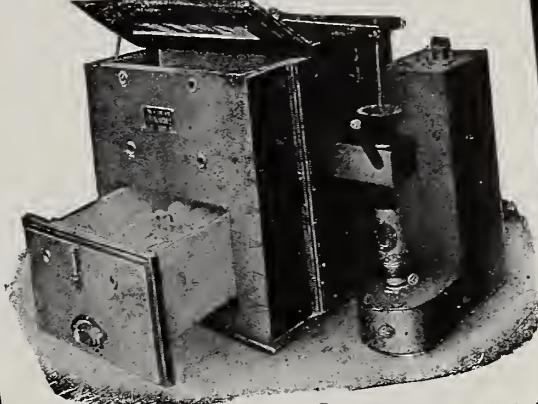
TAMLIN'S

TAMLIN'S NONPAREIL Foster-Mother



The only Rearer in the World Awarded Gold Medal.
60-Chick size, 7ft. long, 2ft. 6in. high, 2ft. wide.
Fitted with Best Copper Tanks.
Absolutely Stormproof.
Prices: 60-chick size, £3 7s. 6d.: 100-chick size, £4.

OVER 50 GOLD AND SILVER MEDALS AWARDED.
TAMLIN'S NON-PAREIL INCUBATOR



PRICES:
30-eggs, from £2 10 0 | 100-eggs, from £3 12 6
60 " " 3 0 0 | 200 " 7 0 0
With Drying Box extra.
If with our Patent Self-supply Lamp, which requires no attention the whole time of hatching, 5/- extra.

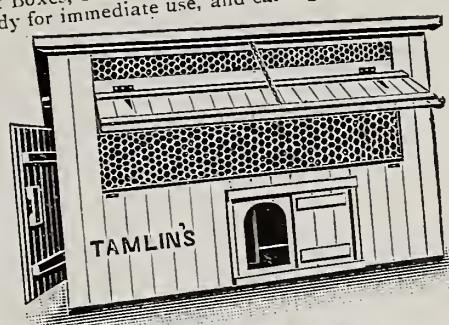
TAMLIN'S POULTRY HOUSES



The CRANFORD.
No. 1—6ft. long, 4ft. wide, 5ft. high, 30/-
No. 2—8ft. long, 5ft. wide, 5ft. high, 42/-
Carriage paid.

TAMLIN'S POULTRY HOUSES

All these Houses are made right throughout of the best red deal, in sections to bolt together in a few minutes, with best workmanship. Complete with Nest Boxes, Bolts and Nuts, Perches, Lock and Key. Ready for immediate use, and carriage paid.



THE CHISWICK.
Fitted with dropping board. Size, 6ft. long, 4ft. wide, 3ft. 6in. high. Carriage paid, 18 6.

Write for our beautiful Art Catalogue of 140 pages, with 250 illustrations of different appliances for Poultry-Breeders and Keepers. No matter what your want might be, you will find it in this book; Poultry Houses, Chicken Rearer, Bone Cutters, Coops, Poultry Foods, Cramming Machines, Marking Rings, &c. It's mailed to you by return free and post free.

W. TAMLIN, 40, St. Margaret's, Twickenham, London.

The Largest Incubator and Poultry Appliance Manufacturer in the World.

moist air, without cumbersome water trays, which gives a decided economy of fuel. While the "Asbestic Hen" Incubator is one of the firm's leading lines, they are renowned for a number of patent poultry appliances—houses, coops, brooders, &c. A good line is their automatic drinking fountain, which seems to have solved a sore point with breeders; while the hot-water apparatus will be found valuable for heating brooder-houses.

Mr. Tamlin's Exports for March.

Exceptionally large shipments of incubators and brooders have been made by Mr. Tamlin during the month of March, which prove in a very striking manner the popularity of the Nonpareil specialities. The following is the complete list: Ten 60-size, twenty-eight 100-size, and three 200-size incubators, to A. Newcomb and Co., New Zealand; twenty-five 100-size, ten 60-size, six 200-size incubators, fifteen 100 and fifteen 60-size foster-mothers, to Fletcher Bradley, Canada; ten 30-size, ten 60-size, fifteen 100-size incubators; ten 100-size and ten 60-size foster-mothers, to Mr. J. F. Marshall, Transvaal, South Africa; twenty 60-size, twenty 100-size, ten 30-size, and six 200-size incubators, ten 60-size and ten 100-size foster-mothers, to Messrs. Chandler, Victoria, Australia; six 100-size and six 60-size incubators, to Mr. Lebaron, France; six 100-size and six 60-size incubators, ten 100 foster-mothers, to M. A. Masson, France; six 60-size and six 100-size incubators, six 60-size and six 100 foster-mothers, to Ed. Baron, Switzerland; six 60-size and six 100-size incubators, three 60-size and three 100-size foster-mothers, to A. F. Phillips and Co., Rhodesia; six 60 incubators, six 60 foster-mothers, to Oakes and Co., Limited, India; one 60 foster-mother, one 60 egg incubator, to Mr. Vuylsteke, Belgium; six 100 incubators and three 100 foster-mothers, two 200-size incubators, to F. Colman, Belgium; one 100 incubator, one 100 foster-mother, to Mr. T. Baker, Nova Scotia; and one 60 incubator to Mr. José de Jorge, Azores.

RAILWAY ANNOUNCEMENTS.

A Tourists' Handbook.

It would be extremely difficult to find a more attractive and tasteful publication than the one which has been published by the Great Western Railway under the title of "Holiday Haunts" for the season 1911. It is, in short, a comprehensive survey of all the health and pleasure resorts fed by this far-reaching line, and provides in the minimum of space a maximum of information regarding such important topics as hotels, boarding-houses, and seaside lodgings and country farmhouses at which the holiday-maker may be most cheaply and comfortably housed. The ground covered by the book includes the South of Ireland and the delightful beaches of Brittany, and the fullest information is given in very readable form regarding the special sights, historical reliques, and important features of the various resorts which the tourist should not fail to see and become acquainted with. The book, which is profusely illustrated with artistic photographs, is published at the small cost of sixpence.

A Useful Publication.

A publication which has just been issued by the Great Northern Railway Company should prove extremely useful to agriculturists, fanciers, horse and cattle dealers, sportsmen, &c. It takes the form of a handy booklet, and gives particulars of the principal dog and poultry shows, horse and cattle fairs, agricultural shows and racing fixtures to be held during 1911, in addition to a large amount of information as to rates, fares, &c.

Copies may be obtained gratis on application to any Great Northern station or office, or of the Superintendent of the Line, King's Cross Station, London, N. The company has also issued a pocket card, giving a list of the principal agricultural shows, which can be obtained from the Goods Manager, King's Cross Station, London, N.

Royal Agricultural Show at Norwich.

For the Royal Agricultural Show the London and North-Western Railway Company, by means of its through booking and working arrangements with the Great Eastern Railway Company, is in a position to deal expeditiously with all descriptions of live stock, implements, and general merchandise handed to it for conveyance.

The London and North-Western Company's express passenger services from Ireland, via Holyhead and other direct routes, Scotland, the Manchester and Liverpool districts, Wales, and the Midland Counties, in connection with the Great Eastern Company's trains from Peterborough, will be found convenient for those attending the show.

Information as to through rates, fares, train services, and transit arrangements can be obtained from any of the company's stationmasters, goods agents, and district representatives, or on application to Mr. R. Turnbull, superintendent of the line, Euston Station, London; or Mr. C. E. Grasemann, chief goods manager, Euston Station, London.

By the regulations of the Royal Agricultural Society, live stock entries close on May 20, poultry and produce May 31.

The company will have an office on the show ground, and its representatives will be in attendance to give every information to exhibitors and the general public as to passenger, live stock, and goods train arrangements.

It is requested that merchandise, live stock, &c., be forwarded to and from the show by this company's route, care being taken to clearly consign the exhibits per "London and North-Western Railway."

The Great Eastern Railway.

Commencing on May 1, the G.E.R. has arranged to greatly improve its train service between Liverpool Street and Southend, principally to meet the requirements of London business men. Four express trains will leave Southend every week-day, arriving at Liverpool Street before 10 a.m., and in the evening a similar number of expresses will be run between 5 p.m. and 6 p.m., the journey being accomplished by the fastest train in 58 min. A midnight train will leave Liverpool Street for Southend daily on week-days in future, for the convenience of those wishing to visit the London theatres and other places of amusement. It has also been arranged, commencing May 1, to run a train from Ipswich at 9.32 p.m. to Felixstowe, in connection with the 7.12 p.m. dining-car train from Liverpool Street, thus affording the inhabitants of Felixstowe and visitors to that resort a later train from London than hitherto. A new later dining-car express will also be run to Norwich from the same date, leaving Liverpool Street at 6.37 every evening on week-days. This train will call at Bishop's Stortford, Audley End, Great Chesterford, Whittleford, Cambridge, Ely, Brandon, Thetford, and Trowse, and be due at Norwich at 9.47 p.m.